#### DEPARTMENT OF THE NAVY

# ATLANTIC DIVISION, NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VIRGINIA

N62470-01-B-1055

NAVFAC SPECIFICATION NO. 05-01-1055

Appropriation: HSG

## SLOCUM VILLAGE FAMILY HOUSING PHASE I

At the

Marine Corps Air Station Cherry Point

H332

#### DESIGNED BY:

Greenhorne & O'Mara, Inc. 9001 Edmonston Road Greenbelt, MD 20770 A/E Contract N62470-96-D-8033

## SPECIFICATION PREPARED BY:

Architectural: Mayela Thompson, RA Mechanical: Christpher Loney, PE Civil/Structural: Meanie Brethauer, PE Electrical: Michael Dixon, PE Landscape Architect: Gary Wimberly, RLA

Submitted By: Susan Ballard, MLA Date: June 21, 2001

SPECIFICATION APPROVED BY:

Specification Branch Head: E.J. Gallaher, P.E. Engineering and Design Director: P.N. Bolton, P.E. For EFD for Commander, NAVFAC:

Date: 7/5/0/

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ATTACHEMENT 2: Existing Conditions from "Site Investigation Report for Hancock and Slocum Villages Housing Project," April 2001, prepared by Greenhorne & O'Mara, Inc.

ATTACHEMENT 3: Existing Site Data

ATTACHEMENT 4: Executive Summary for Hazardous Materials Report (full report provided under a separate cover)

ATTACHEMENT 5: Guide Specification Exceptions (GSE) Slocum Village Family Housing Phase I

ATTACHEMENT 6: Contact List

ATTACHEMENT 7: Drawings

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# DOCUMENT 00102

# LIST OF DRAWINGS 12/97

# PART 1 GENERAL

# 1.1 SUMMARY

This document lists the drawings for the project pursuant to contract clause "DFARS 252.236-7001, Contract Drawings, Maps and Specifications."

# 1.2 CONTRACT DRAWINGS

Contract drawings are as follows:

DRAWING	NAVFAC	TITLE
NO.	DWG NO.	
T101	4446889	Cover Sheet
G101	4446890	Index of Drawings, Symbols, and
		Abbreviations
G102	4446891	Vicinity and Location Maps
H001	4446892	Hazardous Materials Demolition Notes
H101	4446893	Hancock Village - Haz Mat Demolition
		Floor Plan - 1 & 2 BR Units
H102	4446984	Hancock Village - Haz Mat Demolition
		Floor Plan - 3 BR Unit
H103	4446895	Hancock Village - Haz Mat Demolition
		Floor Plan - 4 BR Unit
H104	4446896	Slocum Village - Haz Mat Demolition Floor
		Plan - 1 & 2 BR Units
H105	4446897	Slocum Village - Haz Mat Demolition Floor
		Plan - 2 BR - 2 (ST) & 3 BR Units
H106	4446898	Slocum Village - Haz Mat Demolition Floor
		- 4 BR Unit
PH101	4446899	Demolition Phasing Plan - Slocum Village
PH102	4446900	Demolition Phasing Plan - Hancock Village
MP101	4446901	Slocum Master Plan
A101	4446902	Hancock Village - Existing Architectural
		Floor Plans - 1 & 2 BR. Units
A102	4446903	Hancock Village - Existing Architectural
		Floor Plan - 3 BR. Unit
A103	4446904	Hancock Village - Existing Architectural
		Floor Plan - 4 BR. Unit
A104	4446905	Slocum Village - Existing Architectural
		Floor Plans - 1 & 2 BR. Units
A105	4446906	Slocum Village - Existing Architectural
		Floor Plans - 2 BR. 2 (ST) & 3 BR. Units
A106	4446907	Slocum Village - Existing Architectural
		Floor Plan - 4 BR. Unit
A201	4446908	Typical Existing Multiplex Bldg.

DRAWING	NAVFAC	TITLE
NO.	DWG NO.	
		Elevations
A202	4446909	Typical Existing Multiplex Bldg.
		Elevations

## 1.3 SUPPLEMENTARY DRAWINGS

These supplementary drawings may not be a part of the contract but are included with the drawings for information.

## 1.3.1 Reference Drawings

The following reference drawings are intended only to show the original construction. Drawings are the property of the Government and shall not be used for any purpose other than that intended by the contract. The drawings are half-size. Full-size drawings are available at the bidder's or Contractor's expense. Information on procuring these full-size drawings may be obtained from the Contracting Officer. Full size drawings may be inspected during regular working hours at the office of the Contracting Officer.

REF DRAWING NO.	TITLE
3-31 3-23	Neighborhood Analysis Plan - Slocum Village Neighborhood Analysis Plan - Hancock Village
SS	Sanitary Sewer Map
SS2	Sanitary Sewer Map
SS	Storm Drainage Map
SD2	Storm Drainage Map
WA	Potable Water Map
WA2	Potable Water Map
75-SW	Sanitary Sewer Map
75-SD	Storm Drainage Map
75-WA	Potable Water Map

<sup>--</sup> End of Document --

SECTION 01110

SUMMARY OF WORK 03/00

PART 1 GENERAL

#### 1.1 REFERENCES

Not used.

#### 1.2 WORK COVERED BY CONTRACT DOCUMENTS

# 1.2.1 Project Description

The RFP Solicitation encompasses work in two different neighborhoods, Slocum Village and Hancock Village at MCAS Cherry Point, North Carolina. The work at Slocum Village includes, but is not limited to, the demolition and hazardous materials removal of a minimum of 278 and a maximum of 347 existing one- and two-story multiplex Wherry dwelling units with minimal associated site and infrastructure demolition work, and incidental related work. The work also includes, but is not limited to, the design and new construction of a minimum of 270 and a maximum of 347 one- and two-story townhouse replacement units with site work, neighborhood amenities, and infrastructure to provide a useable neighborhood replacement project. The dwelling units shall be two-, three-, and four-bedroom unit types with a one-car garage, and shall be sited as four, five, and six unit buildings. The work at Hancock Village includes, but is not limited to, demolition and hazardous materials removal of 167 one-story, single and duplex Wherry dwelling units with minimal associated site demolition work.

Hazardous material work includes, but is not limited to, removal and disposal of asbestos-containing materials, lead-based paint, and PCB-containing ballasts along with the recycling of mercury-containing thermostats and fluorescent lamps at Hancock and Slocum Villages.

Site work at Slocum Village includes, but is not limited to, the replacement of streets, parking, sidewalks, fencing, recreation facilities, landscaping, lighting, utilities and new construction of a sanitary sewer lift station. The work also includes the requirement to conduct a topographic and geotechnical survey for the project site from the property line to the high water line of Slocum Creek.

# 1.2.2 Location

The work shall be located in the Slocum Village and Hancock Village neighborhoods at the Marine Corps Air Station, Cherry Point, North Carolina, approximately as indicated on the contract drawings. The exact location will be shown by the Contracting Officer.

# 1.3 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation,

Structures, Equipment, Utilities, and Improvements":

- a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

## 1.4 LOCATION OF UNDERGROUND FACILITIES

Obtain digging permits prior to start of excavation by contacting the Contracting Officer 15 calendar days in advance. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated or specified to be removed but indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made. Perform toning where indicated or shown by the Contracting Officer.

#### 1.4.1 Notification Prior to Excavation

Notify the Contracting Officer at least 48 hours prior to starting excavation work. Contact a utility locator 48 hours prior to excavating. Contractor is responsible for marking all utilities not marked by the utility locator.

## 1.5 PRE-DESIGN MEETING

Within 30 calendar days of the contract award, the Contractor's approved facility design team shall meet the Contracting Officer's design review team to discuss the design criteria of this contract. This meeting shall be included in the activities of the Partnering Session specified in Section 01310, "Administrative Requirements."

#### PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

#### DEPARTMENT OF THE NAVY

# ATLANTIC DIVISION, NAVAL FACILITIES ENGINEERING COMMAND

NORFOLK, VIRGINIA

## SPECIFICATION APPROVED BY:

Specification Branch Head: E.J. Gallaher, P.E. Engineering and Design Director: P.N. Bolton, P.E.

For EFD for Commander, NAVFAC:

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Landscape Architect: Gary Wimberly, RLA

Submitted By: Susan Ballard, MLA Date: June, 21, 2001

# SPECIFICATION APPROVED BY:

Specification Branch Head: E.J. Gallaher, P.E. Engineering and Design Director: P.N. Bolton, P.E.

For EFD for Commander, NAVFAC:

Date:

-- End of Section --

#### SECTION 01140

# WORK RESTRICTIONS 09/00

## PART 1 GENERAL

#### 1.1 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures:"

SD-01 Preconstruction Submittals

Demolition plan; G

Housing plan; G

Medical plan; G

Contractor regulations; G

Transportation of personnel, materials, and equipment; G

Purchase orders; G

# 1.2 SPECIAL SCHEDULING REQUIREMENTS

Within the overall project schedule, commence and complete the work in phases. Each phase of the work shall be completed within the number of calendar days stated in the following schedule.

The Contractor may turnover 20 to 40 dwelling units to the Government as they are finished. The Contractor shall notify the Government at least 14 days prior to the turnover of completed units. The Government may also give the Contractor 20 to 40 additional units to work with from subsequent subphases that will not effect disruption of other occupied units. After award, the winning Contractor may propose a different schedule of turnover of completed units. This schedule shall be coordinated and approved by the Contracting Officer.

a. Scheduled Start Day: The day designated as the beginning of a particular phase; the number listed is the number of calendar days from the award of the contract.

Completion Day: The day designated as the end of a given phase and the day the work in that phase must be completed; the number listed is the number of calendar days from the award of the contract.

Schedule: The following phasing schedule is based upon contract award. The Government reserves the right to make changes to the phasing schedule. Refer to the Phasing Plan indicated on the

drawings.

PHASE	DESCRIPTION	SCHEDULED START DAY	SCHEDULED COMPLETION DAY
A	Completion of building and site work design by the Contractor; One building construction wi site work associated; an Government approval; Demolition of 101 units including hazardous mate in Slocum Village and construction of 135 unit Slocum Village, with ass site and civil work; and Construction of lift sta	d rials s in ociated	547 Calendar . days after receipt of award.
В	Demolition of 97 units a construction of 101 unit in Slocum Village, with associated site and civiwork.	s 547	881
С	Demolition of 80 units a construction of 34 units in Slocum Village, with associated site and civiwork and cleaning of job site.	881	1034
D	Demolition of 167 units in Hancock Village including hazardous materials and cleaning of job site.	1034	1095

- b. Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work.
- c. The Graham Barden Elementary School, Havelock City Sewer Treatment Plant, Fire Station, and remaining dwelling units in Slocum Village will remain in operation during the entire construction period. The Contractor shall conduct his operations so as to cause the least possible interference with normal operations of the Station.
- d. Permission to interrupt any Activity roads, railroads, and/or utility service shall be requested in writing a minimum of 15calendar days prior to the desired date of interruption.
- e. The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing

operations. Identify on the construction schedule each factor which constitutes a potential interruption to operations.

The following conditions apply:

- (1) No more than 101 units may be demolished at one time.
- (2) Water service must be maintained for all occupied units during construction and to the units that remain.
- (3) Roadway service access must be maintained to all occupied units, the elementary school, city sewage treatment plant, fire station, and lift station.
- (4) Pedestrian/bicycle access must be maintained to the elementary school.
- (5) Utility service must be maintained to the elementary school, city sewage treatment plant, fire station, and lift station.
- (6) Sewer service must be maintained to the units that remain and for all occupied units during construction.
- (7) Storm sewer must be maintained to the units that remain and for all occupied units during construction.
- (8) Telephone and cable service must be maintained for all occupied units during construction and to the units that remain.
- (9) Electrical service must be maintained to the units that remain and for all occupied units during construction.
- (10) Existing overhead electrical primary lines must be kept at their existing locations. New construction should not interfere with this service.
- (11) Model units shall follow the requirements specified in Section 01150, "Special Project Procedures."

#### 1.3 CONTRACTOR ACCESS AND USE OF PREMISES

# 1.3.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Ingress and egress of Contractor vehicles at the Activity is limited to Holly Drive and/or Jackson Drive via U.S. Route 70 for Slocum Village, and Giger Avenue and/or Henderson Avenue via Highway 101 for Hancock Village. To minimize traffic congestion, delivery of materials shall be outside of peak traffic hours (6:30 to 8:00 a.m. and 3:30 to 5:00 p.m.) unless otherwise approved by the Contracting Officer.

Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be conspicuously marked for identification.

## 1.3.1.1 Employee List

The Contractor shall provide to the Contracting Officer, in writing, the names of two designated representatives authorized to request personnel and vehicle passes for employees and subcontractor's employees prior to commencement of work under this contract. The Contractor shall adhere to the requirements of "Important Clarifications - Contractors - How to Gain Access," dated 31 October 1995, in obtaining access to the Naval Air Station complex for the life of the contract. A copy of these requirements will be provided at the preconstruction.

# 1.3.2 Working Hours

Regular working hours shall consist of a  $10\ 1/2$  hour period established by the Contractor Officer, between 7 a.m. and  $5:30\ p.m.$ , Monday through Friday, excluding Government holidays.

# 1.3.3 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application three calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work shall be lighted in a manner approved by the Contracting Officer.

# 1.3.4 Occupied and Existing Buildings

The phasing plan requires construction activity in an occupied neighborhood. The Contractor shall take all necessary precautions to isolate the impacts of his work from the residents. The Contractor shall not enter units or neighborhood areas that are not in the current phase of construction. Construction fencing shall be erected around the work site to prevent unauthorized access. The Contractor shall conduct his operations so as to minimize the generation of noise, dust, mud, traffic, and other nuisances that will impact adjacent occupied buildings.

All demolition activities shall utilize water and other methods to minimize the generation of dust. Keep all dumpsters, equipment, and waste piles in secured areas.

# 1.3.5 Utility Cutovers and Interruptions

a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Utility outages require 15 calendar days notification from the Contractor. Conform to procedures required in the paragraph "Work Outside Regular Hours."

- b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.
- c. Interruption to water, sanitary sewer, storm sewer, telephone service, Cable TV, and electric service shall be considered utility cutovers pursuant to the paragraph entitled "Work Outside Regular Hours."
- d. Operation of Station Utilities: The Contractor shall not operate nor disturb the setting of control devices in the station utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor shall notify the Contracting Officer giving reasonable advance notice when such operation is required.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01150

# SPECIAL PROJECT PROCEDURES 02/01

#### PART 1 GENERAL

#### 1.1 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-04 Samples

Model Unit

PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

#### 3.1 MODEL UNIT

Prior to placement of material orders for components of the family housing units and the installation of those components throughout the project, the Contractor shall complete the construction of the components of the model units, and gain the approval of the Contracting Officer for the materials and workmanship therein.

# 3.1.1 Model Unit Description

The model unit building or multi-buildings should be made up of enough oneand two-story townhouse units to show all of the different levels of
completion required below. The model building or buildings should include
a typical two-bedroom, three-bedroom, four-bedroom, and four-bedroom
handicapped accessible one-story unit. The model units shall be part of
the architectural building composite and final site layout. The model unit
shall have enough housing units to show all level of completion
simultaneously, except for foundation and floor slab levels which are
approved by the Contracting Officer and covered by following levels. The
model units shall be family housing units constructed at a location
approved by the Contracting Officer and a part of the permanent structure
of the Slocum Village Family Housing Phase I project.

# 3.1.2 Model Unit Requirements

The construction of model units shall adhere to the following requirements:

a. Materials provided in model units shall be those actually approved in submittals. The QC Manager and Organization must be in place to approve and process submittals in accordance with Section 01330, "Submittal Procedures". The Contractor shall not procure,

- fabricate, or install materials prior to approval by the Contracting Officer.
- b. The Contracting Officer retains the right to disapprove and reject materials or items which are not in compliance with the project Contractor's proposed drawings, specifications, and RFP requirements.
- c. After approval of initial product submittals, the Contractor shall provide full size samples of these components in the required color, and in sufficient quantity to completely outfit the model units. Full size samples shall be provided as dictated by the construction schedule for installation of those components in the model units. Contractor shall not order or approve production of any materials beyond those required for the model units, until the full size samples have been installed in the model units and approved by the Contracting Officer.
- d. Construction of the model units shall proceed immediately after the Contracting Officer acknowledges the required product submittals are approved.
- e. The Contractor shall provide all temporary utilities and climate control necessary to construct, inspect, approve, and maintain the model units.
- f. The Contractor shall provide and maintain the following throughout the construction period of the entire project: temporary parking at the model unit; signage from the temporary parking to the model units; the visual approach to the units including trash removal, lawn and landscaping maintenance.
- g. Locate the model units in an easily accessible location for public tours. The Government shall retain the right to use the model units for supervised tours and public relations activities following each level of completion. Tours will take place during normal working hours.
- h. Prior to completion and approval of the model units, and with written permission to start from the Contracting Officer, the Contractor may perform general sitework and run major utility lines for the rest of the project.
- i. Model units shall establish an expected level of quality for the remainder of the project and be available for Government review until all parts are completed to that level of completion. When all units have been completed, the model units should be completed to useable living quarters.
- j. As each model unit's level of completion is approved by the Contracting Officer, construction of that level's components throughout the remainder of the project may proceed.
- 3.1.3 Model Unit Levels of Completion

Model units shall be exhibited and approved at the following 6 levels of completion. For inspection of model unit upon completion, Level 1 shall each be available to the government for a period of twenty-eight (28) calendar days, and Levels 2 through 6 shall each be available to the government for a period of ten (10) calendar days.

- a. Level 1 (Foundation & Floor Slab Level) Model unit construction shall exhibit treatment of earth excavation, testing of underslab mechanical piping, earth compaction, assembly and support of concrete reinforcing, technique of concrete movement and placement, framing of foundation steps, placement of insulation, final exposed concrete finished surface treatment, location outlines of all walls, all slab penetrations, and structural support points.
- b. Level 2 (Framing Level) Model unit construction shall exhibit all load bearing and non-load bearing framing, sheathing, anchorage for exterior shell materials, and shall be framed out ready for trim.
- c. Level 3 (Plumbing, Mechanical and Electrical Rough-in Level) -Model unit construction shall exhibit electrical conduit and box location for switches, outlets fixtures, cable and data collection. This level's model unit construction shall also exhibit ductwork, built-in plumbing fixtures, plumbing piping, and water pressure test of all plumbing pipe.
- d. Level 4 (Interior Finishes-Rough Level) Model unit construction shall exhibit non-veneer plaster, unspackled and uncaulked wall and ceiling finishes, insulation, interior doors, final locations of all outlets and fixtures.
- e. Level 5 (Interior Finishes & Fixtures-final Level) Model unit construction shall exhibit final interior finishes, veneer plaster, painting, caulking, built-in shelving, cabinetwork, cabinet supported sinks, final door hardware, mechanical louvers, final electrical equipment connections, electrical fixtures, freestanding bathroom fixtures, properly functioning appliances, and operation of mechanical and electrical systems.
- f. Level 6 (Site Finishes Level) Model unit construction shall exhibit final driveway, walks, exterior stairs, final concrete and asphalt finished surface treatment, topsoil quality and application, sodding/seeding of lawn, tree and shrub planting, landscaping beds, playground fall areas and playground equipment. Contracting Officer shall be notified and retain the right to inspect all preparation and installation of pavings.

<sup>--</sup> End of Section --

#### SECTION 01155

# FACILITY PROGRAM REQUIREMENTS 10/00

# PART 1 GENERAL

# 1.1 SUMMARY

## 1.1.1 Section Includes

This section includes functional and operational requirements and information for the design and construction of the Slocum Village Family Housing Phase I project at MCAS Cherry Point, North Carolina. Included are size and efficiency requirements and aesthetic requirements.

#### 1.1.2 Related Sections

Requirements for the design and construction of specific building and supporting facilities systems are specified in Section 01158, "Design/Build Criteria."

#### 1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

28 CFR 35.151 (1994) Americans with Disabilities Act

Accessibility Guidelines for Buildings

and Facilities (ADAAG)

FEDERAL STANDARD (FED-STD)

FED-STD 795 (Basic) Uniform Federal Accessibility

Standards

NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) AND MILITARY

HANDBOOK (MIL-HDBK)

NAVFAC P-80 Facility Planning Factor Criteria for Navy

and Marine Corps Shore Installations

MIL-HDBK-1035 Family Housing Manual

# PART 2 PROGRAM REQUIREMENTS

# 2.1 GENERAL PROGRAM STATEMENT

A new family replacement housing project in Slocum Village is needed at

MCAS Cherry Point, North Carolina to provide adequate family housing and community recreational facilities for married enlisted personnel and their families. The facility shall be of permanent construction with a minimum life expectancy of 30 years.

The Phase I project encompasses the demolition of a minimum 278 and a maximum of 347 existing one-and-two story dwelling units at Slocum Village and the demolition of 167 dwelling units at Hancock Village. The Phase I project has a minimum of four phases of construction. Refer to Section 01158, "Design/Build Criteria" for further details.

The Phase I project encompasses the new construction of a minimum 270 and a maximum of 347 one-and-two story townhouse replacement units with neighborhood amenities and infrastructure to provide a new community at Slocum Village. These units shall be two, three and four bedroom unit types. The Contractor shall construct 62 percent two-bedroom units, 31 percent three-bedroom units and seven (7) percent four-bedroom units.

The new dwelling units shall be two-story townhouses, wood-framed buildings on concrete slabs with a 42-inch wainscot brick veneer on all façades and vinyl siding. The roof coverage shall be asphalt shingles.

#### 2.2 HANDICAPPED ACCESSBILITY

Handicapped accessibility is required. The facility shall be designed and constructed to meet the requirements of FED-STD 795 and 28 CFR 35.151, whichever provides the greatest degree of accessibility. Five percent (5%) of the total dwelling units, an even mix of two-, three-, and four-bedroom units, shall be handicapped accessible with bathrooms and kitchens adaptable. These units shall be one-story and may be attached, semi-attached, or detached dwelling units.

# 2.3 BUILDING PROGRAM

## 2.3.1 Room Spaces and Sizes

Room spaces and sizes are minimum requirements for the dwelling units and are based on the MIL-HDBK-1035 Family Housing Manual. The room dimensions shall be measured along both parallel walls. The following are minimum requirements:

ROOM NAME	NET AREA SF
a. Foyer/Entry	minimum dimension 4 ft-0 inches;
b. Living Room	150.0 SF; minimum dimension 11 ft-8 inches;
c. Dining Room	minimum dimension for 2- & 3-BR units: 9 ft-6 inches; 4-BR units: 10 ft-6 inches;
d. Eat-in-kitchen	minimum dimension 8 ft-6 inches;

e.	Family Room	minimum	dimension	9	ft-6	inches
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f. Kitchen minimum dimension for 2- & 3-BR units: 9 ft-6 inches; 4-BR units:

10 ft-6 inches

minimum 150.0 SF; minimum dimension q. Master Bedroom

11 ft-8 inches

h. Other Bedrooms minimum dimension 10-ft: minimum 120

SF;

i. Master Bathroom 40.0 SF

j. Full Bathroom 40.0 SF

k. Half Bath 16.0 SF minimum

1. Laundry Closet minimum dimension to accommodate the

washer and dryer, with minimum

manufacturer's recommended clearances

for servicing;

16.0 SF for two-BR units; 20.0 SF for m. Interior Storage

3-BR units; 30.0 SF for 4-BR unit;

n. Garage 240.0 SF and additional space to

> accommodate the hot water heater and furnace with minimum manufacturer's recommended clearances for servicing;

o. Handicap Units Net floor area may be increased by a (Accessible)

maximum of 10 percent (10%), not to

exceed 75 square feet.

# 2.3.2 Gross Building Area

Gross and net area calculation shall be provided for each proposed design submittals for each dwelling unit type design.

Gross building area is measured to the outside face of exterior enclosure walls. Do not include normal roof overhangs in gross building area. Exterior covered areas such as covered entries count as half area, and are measured from the face of the enclosure wall to the edge of the covered area. Refer to NAVFAC P-80, for more information on area calculation.

## 2.3.3 Net Area

The dwelling units shall be designed to the maximum statutory net floor area limitations allowed by the Government and is as follows: for the two-bedroom, 950.0 square feet net area; for the three-bedroom, 1200.0 square feet net area; and for the four-bedroom unit, 1350.0 square feet net area. These net areas are for pay grade El through E6.

Net floor area, as defined by 10 U.S.C. 2826, is the space inside the exterior and party walls. Net floor area may be increased by a maximum of 10 percent (10%) for handicap units. Net area excludes:

- a. Exterior and party walls
- b. Half thickness of interior walls adjacent to excluded areas.
- c. Utility and laundry rooms.
- d. Interior and exterior bulk storage.
- e. Washer and dryer closet (not to exceed 30 SF).
- f. Furnace, domestic water heater, and solar equipment spaces.
- g. Stairways, finished space under stairs not exceeding four-feet six-inches in height, and landings at each floor (not to exceed 10 square feet each).
- h. Walls and interior spaces specifically designed for passive solar systems (other than required habitable areas).
- i. Unfinished attic space.
- j. Patios/balconies, porches and terraces (unconditioned and uninsulated).
- k. Additional area required solely to comply with accessibility standards (not to exceed 75 square feet).
- 1. Garages.

#### 2.3.4 Building Space Functions and Description

The following sections provide minimum design requirements as to function, spatial relationships, and materials. For added value and MCAS Cherry Point (Customer) preferred alternatives, see Section 01158, "Design/Build Criteria", Attachment 1.

#### 2.3.4.1 Foyer

## a. Function:

The foyer is a public space, main entrance to the house and welcomes the owners as well as visitors. This space shall be designed with a type of floor that withstands weather inclemency. A coat closet shall be located in this area. The living room shall have direct access or be near-by to this space.

# b. Finishes:

(1) Floor: 8" x 8", ½" nominal thickness, unglazed ceramic tile,

slip resistant. Provide required transition strip where floor meets with another type of flooring material.

- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be latex, semi-gloss.
- (5) Ceiling height: eight-foot minimum.

#### c. Coat Closet:

The coat closet shall have the same finishes as the foyer. The minimum closet length shall be 4 feet. The closet shall be provided with one clothes rod and one full length 10-inch shelf. The minimum inside clear depth shall be two feet. Closet shelf shall be vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

# 2.3.4.2 Living Room

# a. Function:

The living room is a public space and shall be located close to the entrance. The living room shall have direct access from the foyer and direct access to the dining room. This space shall be provided with natural light and air. Living room, dining room, and family room may be designed to be one great room that is an open, flexible space. This space shall provide maximum flexibility in furniture arrangement and shall provide livability through open floor plans. The floor layout may include design features that enhance the feeling of space, definition, and volume.

## b. Finishes:

- (1) Floor: Laminate wood flooring.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: %" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.

(5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be 8 feet.

# c. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

#### 2.3.4.3 Dining Room

## a. Function:

The dining room is a semi-public space and shall be located close to the living room and kitchen. This space shall be provided with natural light and air. Living room and dining room can be one open flexible space. This space shall provide maximum flexibility in furniture arrangement and shall provide livability through open floor plans. The floor layout may include design features that enhance the feeling of space and volume.

#### b. Finishes:

- (1) Floor: Laminate wood flooring.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be 8 feet.

# d. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.4 Family Room

# a. Functions:

The family room is a semi-public space. The family room is a space provided only in three- and four- bedroom unit types and shall be located close to the kitchen. This space shall be provided with natural light and air. This space may be combined with the living and dining room to create a great room. This space shall provide maximum flexibility in furniture arrangement and shall provide livability through open floor plans. The floor

layout may include design features that enhance the feeling of space, definition, and volume. Exterior integration and/or access to outdoors activities are generally provided from this space. An atrium door shall be provided when outdoor integration is provided. Refer to Section 01158, "Design/Build Criteria" for specification on atrium door.

#### b. Finishes:

- (1) Floor: Laminate wood flooring.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be 8 feet.

# c. Sound Rating:

Refer to Section 01158, "Design/Build Criteria" paragraph entitled "Building Acoustics".

## 2.3.4.5 Kitchen

## a. Function:

The kitchen room is a semi-public space. The kitchens shall be laid out for efficient food handling with a work triangle. Properly located prep counters and cabinet space shall be provided. A base cabinet, minimum 15-inches wide shall be provided on the handle side of the refrigerator. Range shall not be located adjacent to the refrigerator, adjacent to a corner or in passageway. The dishwasher shall be installed adjacent to the kitchen sink. A breakfast bar shall be provided and shall be integrated with the kitchen countertop. Convenient access to the kitchen from the garage shall be considered.

# b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" wood base board member with a molded top and wood quarter round molding, primed and painted.

- (3) Walls: %" water resistant gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss. The walls between the base cabinet and the wall cabinets shall have a ceramic tile finish, matching the texture, size, and finish of the tile countertop.
- (4) Ceiling:  $\frac{1}{2}$  gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be 8 feet.

#### c. Cabinets:

Refer to Section 01158, "Design/Build Criteria" for specification requirements.

# d. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

# e. Pantry Closet:

A pantry closet with a door shall be provided convenient to the kitchen. The pantry closet shall have sheet vinyl flooring with a wood baseboard. The minimum closet length shall be two feet. The closet shall be provided with a minimum of five, 12-inch full length shelves. The minimum inside clear depth shall be 2 feet. Provide vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

# 2.3.4.6 Eat-In Kitchen and/or Breakfast Bar

#### a. Function:

The eat-in kitchen and/or breakfast bar is a semi-public space. The eat-in kitchen is a space provided in three- and four- bedroom unit types and shall be an extension to the kitchen room. Breakfast bars shall be located in this area and shall be part of one of the kitchen base cabinets. The eat-in kitchen space shall not be located in the living or dining rooms.

# b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as selected by the Contracting Officer. Provide required threshold where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall

have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.

- (4) Ceiling:  $\frac{1}{2}$  gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

## c. Breakfast Bar:

The Breakfast bar countertop finish shall be the same as the kitchen countertop. Refer to Section 01158, "Design/Build Criteria" for specification requirements.

#### 2.3.4.7 Master Bedroom

#### a. Function:

The location of the bedroom area shall provide privacy. The master bedroom shall be designed to accommodate king size beds and shall provide maximum flexibility for furniture arrangement. The master bedroom shall be accessible from the hall and shall have direct access to the master bathroom in the three- and four-bedroom units. Closets or the master bathroom shall be provided between common walls to allow a better sound attenuation between bedrooms. Bedroom windows shall be operable and sized for emergency egress.

## b. Finishes:

- (1) Floor: Vinyl composition flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$  gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

#### c. Walk-In Closets:

A walk-in closet shall be provided in all master bedrooms. The walk-in closet shall have the same floor finish as the adjacent floor. Provide a wood baseboard to match master bedroom baseboard,

primed and painted. The minimum closet length shall be six feet. The closet shall be provided at a minimum with one clothes rod and one full length 10-inch shelf. Closet shelf shall be vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

#### d. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.8 Bedrooms

# a. Function:

The location of the bedrooms' area shall provide privacy. The bedrooms shall provide maximum flexibility for furniture arrangement. Each bedroom shall be accessible from the hall and shall be conveniently located to have access to the full bathroom. Closets shall be provided between common walls to allow a better sound attenuation between the bedrooms. Bedroom windows shall be operable and sized for emergency egress.

#### b. Finishes:

- (1) Floor: Vinyl composition flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round shoe molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$  gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

## c. Closet:

A closet shall be provided in the bedrooms. The closet shall have the same floor finish as the adjacent floor. Provide a wood baseboard, primed and painted. The minimum closet length shall be 6 feet for the second bedroom and 4 feet for the third and/or forth bedroom. The minimum inside clear depth shall be 2 feet. The closet shall be provided with one clothes rod and one full length 10-inch shelf. Closet shelf shall be vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

# d. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.9 Master Bathroom

# a. Function:

The location of the master bathroom area shall provide privacy. The master bathroom is a space that is required in the three- and four-bedroom units. The master bathroom shall be directly accessed from the master bedroom. Bathrooms shall not open into a living area and shall be located to avoid direct sight lines into common areas. Tubs and showers shall not be placed under windows.

#### b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" water-resistant gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss. The walls (three sides) in the tub area shall be ½" cementitious gypsum wallboard, finished with eight-inch by eight-inch ceramic tile, full height, as specified in Section 01158, "Design/Build Criteria".
- (4) Ceiling:  $\frac{1}{2}$  water-resistant gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

## c. Cabinets:

Refer to section 01158, "Design/Build Criteria" for specification requirements.

# d. Bathroom Accessories:

Bathroom accessories shall include reflective mirror (3' x 5' minimum), lighted medicine cabinet with sliding or hinged door type, toilet paper holder, two (2) towel bars, robe hooks, and metal shower curtain rod. Combined length of towel bars shall not be less than 42 inches. Bathroom accessories can be either recessed or surface mounted and constructed of stainless steel. Spring-loaded doors for medicine cabinets are prohibited. A ceramic recessed soap dish shall be provided in the tub area. The

ceramic accessories shall be of the same materials and finish as glazed wall tile. Additional blocking in the wall framing shall be provided at locations where bathroom accessories are installed.

# e. Plumbing Fixtures:

Refer to section 01158, "Design/Build Criteria," paragraph entitled "Plumbing Fixtures" for specification requirements.

# f. Sound Rating:

Refer to section 01158, "Design/Build Criteria" for specification requirements.

## 2.3.4.10 Full Bathroom

## a. Function:

The location of the full bathroom area shall provide privacy. A second full bathroom shall be provided in the three- and four-bedroom units. Two-bedroom unit shall have one full bathroom comparable to a master bathroom. The full bathroom shall be directly accessed from the hallway. Bathrooms shall not open into a living area and shall be located to avoid direct sight lines into common areas such as the living room, dining room, family room, kitchen, etc. Tubs and showers shall not be placed under windows.

## b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as approved by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.
- (3) Walls: ½" water-resistant gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss. The walls (three sides) in the tub area shall be ½" cementitious gypsum wallboard, finished with 8-inch by 8-inch ceramic tile, full height, as specified in Section 01158, "Design/Build Criteria".
- (4) Ceiling:  $\frac{1}{2}$  water-resistant gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

#### c. Cabinets:

Refer to section 01158, "Design/Build Criteria" for specification

requirements.

#### d. Bathroom Accessories:

Bathroom accessories shall include reflective mirror (3' x 5' minimum), lighted medicine cabinet with sliding or hinged door type, toilet paper holder, two (2) towel bars, robe hooks, and metal shower curtain rod. Combined length of towel bars shall not be less than 42 inches. Bathroom accessories can be either recessed or surface mounted and constructed of stainless steel. Spring-loaded doors for medicine cabinets are prohibited. A recessed ceramic soap dish shall be provided in the tub area. The ceramic accessories shall be of the same materials and finish as glazed wall tile. Additional blocking in the wall framing shall be provided at locations where bathroom accessories will be installed.

## e. Linen Closet:

Linen closet shall be convenient to the bathrooms and shall have a hinged door with hardware to match interior door. Linen closets shall have a minimum depth of 1'-6" and shall have four (4) full depth shelves. The shelves shall be vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

# f. Plumbing Fixtures:

Refer to Section 01158, "Design/Build Criteria," paragraph entitled "Plumbing Fixtures" for specifications.

# g. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.11 Half-Bathroom

# a. Function:

The half bathroom is provided only in dwelling units that are two-story or split-level. The main function is to allow visitors the use of a restroom without going up or down stairs. The door entrance to the half bathroom shall avoid direct sight lines into common areas such as the living, dining and/or family rooms and kitchen, etc.

## b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board member with a molded top and wood quarter round molding, primed and painted.

- (3) Walls: %" water resistant gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$  water-resistant gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be eight feet.

#### b. Cabinets:

Refer to Section 01158, "Design/Build Criteria" for specification requirements.

#### c. Bathroom Accessories:

Bathroom accessories shall include reflective mirror (3' x 5' or full wall length), lighted medicine cabinet with sliding or hinged door type, toilet paper holder, two (2) towel bars. Combined length of towel bars shall not be less than 30 inches. Bathroom accessories can be either recessed or surface mounted and constructed of stainless steel. Spring-loaded doors for medicine cabinets are prohibited. Additional blocking in the wall framing shall be provided at locations where bathroom accessories will be installed.

# d. Plumbing Fixtures:

Refer to Section 01158, "Design/Build Criteria," paragraph entitled "Plumbing Fixtures" for specifications.

## e. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.12 Hallways and/or Corridors

#### a. Function:

Hallways and/or corridors are means of circulation and shall provide users with simple, direct access from the main entry to all parts of the dwelling unit. An efficient design shall minimize long extensive and dead-end corridors and/or hallways. The minimum width of the corridors and/or hallways shall be 40 inches and ceiling height shall be minimum seven feet. Hallways near staircases shall be provided with enough ceiling height to facilitate furniture movement from floor to floor. Electrical outlets shall be provided in hallways or corridors, refer to Section 01158, "Design/Build Criteria", paragraph entitled "Electrical Design."

#### b. Finishes:

- (1) Floor: Vinyl composition flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material. If a hallway is provided on the first floor, the finish shall be laminate wood flooring.
- (2) Base Board: 4" height wood base board member with a molded top and a wood quarter round molding, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$  gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be vaulted, sloped or flat. Minimum height at low point shall be 7 feet.

# c. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.13 Interior Storage

## a. Function:

Interior storage space shall be provided preferably on the first floor. All dwelling units shall be provided with interior storage room. Shelves shall be provided and shall be vinyl coated wire shelving as specified in Section 01158, "Design/Build Criteria."

For bulk interior storage, provide minimum four shelves with a minimum of 16 square feet for the two-bedroom units, 20 square feet for the three-bedroom unit and 30 square feet for the four-bedroom unit.

## b. Finishes:

- (1) Floor: Vinyl composition tile (VCT), color and pattern as approved by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board, primed and painted.
- (3) Walls: ½" gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.

- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be sloped or flat. Minimum height at low point shall be seven feet.

# 2.3.4.14 Exterior Storage

This space is not required in this project.

## 2.3.4.15 Interior Stairs

# a. Function:

Provide vertical access to second floor. The minimum inside width shall be 38 inches. The interior stair design shall comply with the Life Safety Code Handbook. The stair design shall contribute aesthetically to the overall project. For further stair design and look, refer to Section 01158, "Design/Build Criteria."

#### b. Finishes:

Treads and Riser - Stair treads shall be 10½ inches minimum width and riser shall be a maximum of 8 inches high. The stair shall be constructed and finished with wood species, such as oak. Stairs shall be sound-proof. If stair is located adjacent to party walls, it shall be provided with additional sound attenuation. For further design criteria, refer to Section 01158, "Design/Build Criteria".

# 2.3.4.16 Laundry Room

#### a. Function:

The laundry room shall be located in a conditioned semi-public area. Provide a laundry room for three- and four-bedroom units. Provide a closet type washer/dryer space at a minimum for the two-bedroom units. Laundry areas on the second floor are not allowed. The space provided should have doors that provide full access when open. The dryer shall be located on an exterior wall for adequate venting. The length of the vent run shall not exceed more than 10 feet to the outside vent and shall not contain more than two 90-degree turns. No flexible duct shall be used. Dryer vents shall not be located near front entry or rear doors except to connect dryer to vents. The minimum net clear door width opening to closet laundry-type shall be 5 feet 4 inches. For laundry rooms, door width shall be 2 feet 8 inches. Laundry closets and laundry rooms shall be sized properly to allow for the minimum manufacturer's recommended clearance for servicing.

## b. Finishes:

- (1) Floor: Sheet vinyl flooring, color and pattern as selected by the Contracting Officer. Provide required transition strip where floor meets with another type of flooring material.
- (2) Base Board: 4" height wood base board, primed and painted.
- (3) Walls:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Walls shall have an "orange peel" texture. The paint finish coat shall be latex semi-gloss.
- (4) Ceiling:  $\frac{1}{2}$ " gypsum wallboard primed and painted. Ceilings shall have a smooth texture. The paint finish coat shall be semi-gloss.
- (5) Ceiling height and style: Ceiling can be sloped or flat. Minimum height at low point shall be seven feet.

#### c. Shelves:

Provide two (2) full length shelves 10" deep above washer and dryer and one hanging rod. One shelf shall be sized with adequate clearance for large box of detergent, second shelf shall be located high enough to provide clearance for hanging clothes. Shelves shall be vinyl coated as specified in Section 011158, "Design/Build Criteria", paragraph entitled "Interior Specialties", subparagraph, Vinyl-Coated, Steel Rod Ventilated Shelving System.

### d. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

## 2.3.4.17 Mechanical Room

#### a. Function:

This space is not required. The mechanical equipment shall be located in the garage, including the electric water heater.

#### 2.3.4.18 Garage

#### a. Function:

A one-car attached garage shall be provided for each dwelling unit. The garage slab shall be reinforced on compacted sub-grade and shall be set four-inches below the level of the housing unit floor elevation and shall slope to drain away from the house.

This space shall also house the mechanical equipment and electric water heater. A four-inch raised, reinforced concrete slab shall be provided to accommodate the mechanical equipment. The equipment shall be protected from vehicle impact and prevent accumulation of flammable items near the equipment. The

Contractor shall provide some means of protection, either by providing a low wall or concrete bollards.

The garage structure may be sited or front of the dwelling, depending on the site conditions and constraints. Breezeways between the dwelling units and garages are not allowed. An enclosed mud-room is preferred. The garage structure must be integrated seamlessly into the design of the house and have the same exterior materials used for the unit, including but not limited to wall covering and roofing materials. Doors and window if provided should be similar to and complementary to those used on the house. Metal overhead sectional garage door, manually operated shall be provided for vehicle entry. The garage shall have direct access to the dwelling unit.

#### b. Finishes:

- (1) Floor: Sealed concrete floor.
- (2) Walls: Exposed framing
- (3) Ceiling: Exposed framing
- (4) Ceiling Height and style: Exposed framing can be sloped or flat. Minimum height at low point shall be eight feet.

#### c. Sound Rating:

Refer to Section 01158, "Design/Build Criteria", paragraph entitled "Building Acoustics".

### d. Fire Rating:

If walls are adjacent to habitable spaces they shall be fire rated in accordance with the National Fire Protection Association Code (NFPA).

#### 2.3.4.19 Exterior Patios

## a. Function:

Patios shall be provided to expand outdoor living space in all the dwelling units. Screened porches are prohibited. The patios shall integrate with indoor living spaces. The individual patios and adjacent outdoor yards shall be private spaces for personal and family use. Patios shall be provided at the rear or side of the units with positive drainage and sloping away from the building. Patio privacy screens shall be included between attached dwellings. For sizes and type of screening refer to Section 01158, "Design/Build Criteria".

## b. Finishes:

Floor - Sealed concrete floor and or concrete blocks on compacted sub-grade. Paved concrete patios shall be a minimum of four inches thick.

#### 2.3.4.20 Trash Enclosure

#### a. Function:

This space is not required in this project. A space shall be allocated in the garage to accomodate two trash receptacles. The Contractor shall coordinate sizes with the Contracting Officer.

#### 2.3.4.21 Exterior and Interior Doors

Refer to Section 01158, "Design/Build Criteria" paragraph entitled "Doors, Frames, and Hardware" for requirements.

#### 2.3.4.22 Building Acoustics

Refer to Section 01158, "Design/Build Criteria" paragraph entitled "Building Acoustics" for requirements.

## 2.4 ACCESSIBLE UNIT PROGRAM REQUIREMENTS

The handicap dwelling units shall be provided with the same spaces and finish requirements specified in the above paragraphs. The kitchens, bathrooms, hallways and door hardware shall meet the requirements and comply with ADA and UFAS. The bathrooms shall be provided with extra blocking in the walls for future installation of grab bars and modifications to bathroom fixture height. Plumbing fixtures shall not be handicapped. Faucet handles shall be lever types.

### 2.5 SUPPORTING FACILITIES PROGRAM REQUIREMENTS

## 2.5.1 Site Layout Requirements

Buildings, streets, drives, parking, walkways, service access, recreational facilities, landscaping and utilities shall be located with consideration to existing site features and environmental conditions. Site layout shall consider topography (grading and positive drainage away from structures and paving), solar orientation, energy conservation, views, access, vehicular traffic and pedestrian circulation, safety, noise and aesthetics.

The area available for site development and construction activities (i.e., the area available for the new replacement housing, supporting facilities, temporary construction facilities and construction storage/laydown) is confined to areas of existing housing above the high water line and shall be referred to as the "specified operations area". The operations area includes the area encompassed by the project limit lines for Phase I as indicated on the drawings (see Phasing Plan, under separate cover) with the following exceptions:

a. No construction activities shall take place within areas designated as wetlands, per Geotechnical Report. All Offerors will be required to complete this project with no impact to wetlands and will be required to take whatever action is necessary to assure compliance with all applicable Federal, State and local laws and regulations or any directives issued by any Federal, State, or local jurisdiction to prevent any impact to any wetlands. The Contractor shall not be entitled to any equitable adjustment to the contract price or time for performing its construction without impact to wetlands.

- b. No construction activities such as grading, material storage, or vehicular traffic shall take place within 75 percent of the dripline of existing trees (designated for preservation), as measured from the base of trunk out to the edge of canopy.
- c. Utility connections and passive water quality facilities to support the new replacement housing may take place outside the specified operations area between the high water line and the 50' Nuese River buffer to Slocum Creek. Grading and storm drainage collection and treatment shall be accomplished within the specified operations area, except that conveyance of collected/treated storm water to the point of outfall may occur outside the specified operations area.

#### 2.5.1.1 Building Layout

Replacement housing buildings shall consist of attached two-story townhouses. No less than four (4) or more than six (6) dwelling units may be combined to create a building and all dwelling units shall have an attached one-car garage. A mix of four-, five-, and six-unit buildings is required. Buildings shall be arranged to avoid driveway connections to collector roadways. See Section 01158 of this RFP for setbacks and other specific spatial requirements for building layout. Five percent (5%) of the replacement housing shall be handicapped accessible units. Handicapped accessible units may be one-story attached, semi-attached or detached units. The location of handicapped accessible units shall be shown on the proposed site plan and they should be distributed throughout the neighborhood rather than located adjacent to one another.

#### 2.5.1.2 Vehicular Access and Circulation

Vehicular access to Phase I construction shall be via Holly Drive or Jackson Drive through the existing Slocum Village neighborhood. Slocum Village will remain occupied during demolition and construction. A temporary alternate construction roadway is preferred if designed to provide construction access that would create less interruption to the existing neighborhood. Existing 32' collector roadways (Cedar Drive and Jackson Drive) shall remain in their current alignment and be improved as open section, with sidewalk, storm drains, and paving surface (see RFP Master Plan, under separate cover). New local roadways shall be designed as close section loop roads to provide driveway access to replacement housing units. Connection of unit driveways to collector roadways shall be minimized. New local loop roads shall connect to improved collector roadways with a minimum 60' off-set at the centerline between one another or directly across from one another.

## 2.5.1.3 Parking

Parking shall be provided for each dwelling unit at the minimum rate of two

off-street spaces per unit and one on-street space per unit for guest parking. One of the required off-street spaces may be provided in the required attached garage and the other shall be provided in the driveway required for each dwelling unit. Additional on-street spaces may be provided in guest parking areas along local loop roadways where space permits. Collector roadways (32' wide) shall be designed for parking on both sides. Local loop roads (28' wide) shall be designed for parking on one side.

#### 2.5.1.4 Pedestrian Access and Circulation

Pedestrian circulation shall be provided by a sidewalk system along both sides of all collector roadways and on one side of all local loop roads at a minimum. Handicapped ramps shall be provided in all locations where the sidewalk system intersects roadways. Pedestrian crosswalks shall be provided where the sidewalk system crosses collector roadways. A hiker-biker loop trail system independent of the roadway network shall also be provided for pedestrian circulation. Prior to the demolition of the Cedar Drive connection to the existing Barden Elementary School, the Contractor shall construct a permanent pedestrian connection between Slocum Village and the school. This connection will be used during construction for neighborhood access to the school and shall be fenced or separated from the construction area.

## 2.5.1.5 Outdoor Activity Areas

Recreation facilities shall be consolidated in a centrally located park of no less than five acres in size. The minimum number and type of facilities shall be: two (2) playgrounds (one refurnished with re-located equipment and one with new equipment), one (1) sand volleyball court, two (2) full-size basketball courts, one (1) soccer field, one (1) group picnic shelter, and six (6) individual picnic shelters. A hiker-biker trail system of minimum six-foot wide asphalt surface shall be provided throughout the neighborhood to connect housing clusters to recreation facilities. Private outdoor activity areas shall be provided with each dwelling unit in the rear yard consisting of a patio area. A six-foot high, eight-foot long privacy screen between dwelling units shall be provided.

## 2.5.1.6 Landscaping

Provide landscaping (deciduous, ornamental and evergreen trees and shrubs) to define and complement the building architecture and the neighborhood character, screen views, provide solar and wind screening and create boundaries. Seed or sod all yards and open space areas within the operations area to establish turf as well as any areas disturbed during construction. The landscape design shall incorporate groupings of plant material, foundation plantings and street tree planting to define the open spaces and to provide a complete landscaped project.

#### 2.5.2 Site Utility Requirements

Provide water (domestic and fire), sanitary sewer, storm sewer, storm water management features, electric (power and site lighting), telephone and

cable television services to the replacement housing neighborhood. Points of connection shall be coordinated with the Contracting Officer and utility provider. Unless otherwise specified, all utility services shall be run underground. Utilities shall not be run under buildings.

## 2.6 AESTHETIC REQUIREMENTS

#### 2.6.1 Exterior Appearance

The overall exterior appearance of the replacement housing units shall be designed to create a visually appealing streetscape with variety and harmony. Variations in textures and the use of reveals, offsets, colors, and accents are required. The exteriors shall harmonize with the surrounding environment. A variety of exterior facades and architectural features shall be provided to create visual interest in the building facades. End units facing the streets shall be designed with fenestration, windows, and other architectural features as specified in Section 01158, "Design/Build Criteria."

## 2.6.2 Interior Appearance

Required finishes are specified herein. Finishes that are not specified shall be selected by the Contractor and approved by the Contracting Officer to meet the functional and aesthetic requirements of the space.

## PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01158

# DESIGN/BUILD CRITERIA (01/00)

#### PART 1 GENERAL

This section has been provided with the following attachments:

- (1) Attachment 1: Priority List & Added Value Matrix
- (2) Attachment 2: Existing conditions from "Site Investigation Report for Hancock and Slocum Villages Housing Project", April 2001, prepared by Greenhorne & O'Mara, Inc.
- (3) Attachment 3: Existing Site Data
- (4) Attachment 4: Executive Summary for Hazardous Material Report, (full report provided under separate cover).
- (5) Attachment 5: Guide Specification Exceptions (GSE) Slocum Village Family Housing Phase I
- (6) Attachment 6: Contact List
- (7) Attachment 7: Drawings

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

NAVAL FACILITIES ENGINEERING COMMAND DESIGN MANUALS (DM)AND MILITARY HANDBOOK (MIL-HDBK)

DM-5.4	Pavements				
DM-5.5	General Provisions and Geometric Designs for Streets, Design for Roads, Walks, and Open Storage Areas Army TM-822-2 Air Force AFM 88-7 (Chapter 5)				
DM-07.01	(1986) Soil Mechanics				
DM-07.02	(1986) Foundations and Earth Structures				
DM-07.03	(1983) Soil Dynamics, Deep Stabilization, and Special Geotechnical Construction				
MIL-HDBK-1003/3	Heating, Ventilating, Air Conditioning,				

and Dehumidifying Systems

MIL-HDBK-1005/2 Hydrology

MIL-HDBK-1005/7 Water Supply Systems

MIL-HDBK-1006/1A Policy and Procedures for Project Drawing

and Specification Preparation, 15 June 95

MIL-HDBK-1008C Fire Protection for Facilities

Engineering, Design, and Construction

MIL-HDBK-1035 Family Housing Manual

MIL-HBBK-1190 Facility Planning and Design Guide

ME Guide Atlantic Division Mechanical Engineering

Design Guide

NAVY MANUAL

NAVFAC P-80 Facility Planning Factor Criteria for Navy

and Marine Corps Shore Installations

AMERICAN CONCRETE INSTITUTE (ACI)

ACI 318 (1999) Building Code Requirements for

Structural Concrete

ACI 530.1 (1995) Masonry Structures (ASCE 6-95)

AMERICAN INSTITUTE OF ARCHITECTS (AIA)

AIA AGS (1994) Architectural Graphic Standards

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI SG-673 (1989; Errata 1990) Cold-Formed Steel

Design Manual

AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)

ANSI/BHMA A156.1 (2000) Builder's Hardware Manufacturers

Association (BHMA) Butts and Hinges

ANSI/BHMA A156.2 (2000) Builder's Hardware Manufacturers

Association (BHMA) Mortise, Locks, and

Latches

ANSI/BHMA A156.5 (2000) Builder's Hardware Manufacturers

Association (BHMA) Auxiliary Locks

ANSI/BHMA A156.12 (2000) Builder's Hardware Manufacturers

Association (BHMA) Interconnected Locks

and Latches

ANSI/BHMA A156.4 (2000) Builder's Hardware Manufacturers

Association (BHMA) Closers

ANSI/BHMA A156.16 (2000) Builder's Hardware Manufacturers

Association (BHMA) Auxiliary Hardware

ANSI Z60.1 (1990) Nursery Stock

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)

ARI 210/240 (1994) Unitary Air-Conditioning and

Air-Source Heat Pumps Equipment

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7 (1998) Minimum Design Loads for Buildings

and Other Structures

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING

ENGINEERS, INC. (ASHRAE)

ASHRAE 62 (1999) Ventilation for Acceptable Indoor

Air Quality

ASHRAE Standard 90.1 1989 (Errata September 1990, and Addendum

90.1B-1992) Energy Efficient Design of New Buildings(1989; Errata 1990, Addendum 1992 and 1993) Energy Efficient Design of New Buildings Except Low-Rise Residential

Buildings

ASHRAE HA (1995) Handbook, HVAC Applications

(Including Additions and Corrections for

1995, 1996)

ASHRAE HF (1997; Addenda 1998) Handbook, Fundamentals

ASHRAE HANDBOOKS (2000) HVAC Systems and Equipment

(1998) Refrigeration Systems and

Applications

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME All2.19.2M (1995) Vitreous China Plumbing Fixtures

ASME A112.6.1M (1997) Floor-Applied Supports for

Off-the-Floor Plumbing Fixtures for Public

Use

ASME/ANSI-B-16.26 (1988) Cast Copper Alloy Fittings for

Flared Copper Tubes

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 366	(1997) Commercial Quality (CS) Steel Carbon, (0.15 Maximum Percent) Cold-Rolled
ASTM B 42	(1998) Seamless Copper Pipe, Standard Sizes
ASTM B 88	(1999; Rev. A) Seamless Copper Water Tube
ASTM D 2466	(1997) Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
ASTM D 3139	(1998) Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM F 1292	(1993) Impact Attenuation of Surface Systems Under and around Playground Equipment
ASTM F 1487	(1997c)Standard Consumer Safety Performance
ASTM SSFMP	Selected ASTM Standards for Fence Materials and Products (6th Edition)

# AMERICAN WATER WORKS ASSOCIATION (AWWA)

	for Ductile Iron Pressure Pipe and Fittings
AWWA C502	(1994) Dry-Barrel Fire Hydrants
AWWA C509	(1994) Resilient-Seated Gate Valves for Water and Sewerage Systems
AWWA C600	(1993) Installation of Ductile-Iron Water Mains and Their Appurtenances
AWWA C651	(1992) Disinfecting Water Mains
AWWA C900	(1989; Addendum 1992) Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. Through 12 in., for Water Distribution

# CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1910.1000	Air Contaminants
29 CFR 1926.21	Safety Training and Education
29 CFR 1926.59	Hazard Communication

40 CFR 260 Hazardous Waste Management Systems: General

40 CFR 264 Owners and Operators of Hazardous Waste
Treatment, Storage, and Disposal Facilities

DEPARTMENT OF AGRICULTURE (DOA)

DOA SSIR (April 1984) Soil Survey Investigation Report No. 1, Soil Survey Laboratory

Methods and Procedures for Collecting Soil

Samples, Soil Conservation Service

ELECTRONIC INDUSTRIES ASSOCIATION (EIA)

EIA/TIA-570 (1991) Residential and Light Commercial

Telecommunications Wiring Standard

FEDERAL SPECIFICATIONS (FS)

FS WW-P-460 (Rev. D) Pipe Fittings; Brass or Bronze

(Threaded) Classes 125 and 250 Pound

FEDERAL STANDARDS (FED-STD)

FED-STD 795 (Basic) Uniform Federal Accessibility

Standards

INTERNATIONAL CODE COUNCIL (ICC)

ICC IRC (2000) International Residential Code for

One- and Two-family Dwellings

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

ICBO UBC (1997) Uniform Building Code

ILLUMINATING ENGINEERING OF NORTH AMERICA (IES)

IES LHBK (1993) Lighting Handbook, Reference and

Application

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2 (1997) National Electrical Safety Code

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY, INC. (MSS)

MSS-SP-80 (1987) Bronze Gate, Globe, Angle and Check

Valves

MASTER PAINTERS INSTITUTE (MPI) ORGANIZATION

MPI 10	(MAR 2000) Exterior Latex, Flat	
MPI 45	(MAR 2000) Interior Primer Sealer	
MPI 47	(MAR 2000) Interior Alkyd, Semi-Gloss	
MPI 50	(MAR 2000) Interior Latex Primer Sealer	
MPI 79	(MAR 2000) Marine Alkyd Metal Primer	
MPI 110	(MAR 2000) Interior/Exterior High Performance Acrylic	
MPI 119	(MAR 2000) Exterior Latex, High Gloss (acrylic)	
MPI 139	(MAR 2000) High Performance Latex, White And Tints - MPI Gloss Level 3	
MPI 141	(MAR 2000) High Performance Semi-Gloss Latex White and Tints - MPI Gloss Level 5	5
NATIONAL ASS	IATION OF PLUMBING-HEATING-COOLING CONTRACTORS (NAPHCC)	
NAPHCC NSPC	(1993; Supp. 1994) National Standard Plumbing Code - Illustrated	
NATIONAL ELEC	RICAL MANUFACTURERS ASSOCIATION	
NEMA LD 3	(1995) High-Pressure Decorative Laminates	3
NATIONAL FIRE	PROTECTION ASSOCIATION (NFPA)	
NFPA 10	(1995) Portable Fire Extinguishers	
NFPA 13	(1999) Installation of Sprinkler Systems	
NFPA 13R	(1996) Residential Occupancies up to and Including Four Stories in Height Sprinkle Systems	
NFPA 24	(1995) Installation of Private Fire Service Mains and their Appurtenances	
NFPA 70	(1999) National Electrical Code	
NFPA 72	(1996) National Fire Alarm Code	
NFPA 90A	(1999) Installation of Air Conditioning and Ventilating Systems	
NFPA 101	(2000) Life Safety Code	

NFPA 720 (1998) Recommended Practice for the

Installation of Household Carbon Monoxide

(CO) Warning Equipment

NORTH CAROLINA SEDIMENT CONTROL COMMISSION (NCSCC)

NCSCC ESCM (1993) Erosion and Sediment Control

Planning and Design Manual

NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL HEALTH AND NATURAL

RESOURCES (NCDEHNR)

NCDEHNR WGM Wastewater Guidance Manual

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

NCDOT RS (1995) Roads and Structures

NORTH CAROLINA DIVISION OF HIGHWAYS (NCDH)

NCDH GDSHD Guidelines for Drainage Studies and

Hydraulic Design

PUBLIC LAW

PL 101-336 (July 29, 1990) (101st Congress) Americans

with Disabilities Act

SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC. (SBCCI)

SBCCI SSTD 10 (1999) Standard for Hurricane Resistant

Residential Construction

SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION

(SMACNA)

SMACNA DCS (1985) HVAC Duct Construction Standards -

Metal and Flexible

SMACNA HVACADLTM (1985) HVAC Air Duct Leakage Test Manual

SMACNA HVACTAB (1993) HVAC Systems Testing, Adjusting and

Balancing

UNI-BELL PVC PIPE ASSOCIATION (UBPPA)

UBPPA UNI-B-3 (1988) Installation of Polyvinyl Chloride

(PVC) Pressure Pipe

UNDERWRITERS LABORATORIES INC. (UL)

UL 246 (1993; R 1994, Bul. 1994) Hydrants for

Fire-Protection Service

UL 790 (1997) Fire Resistance of Roof Covering Materials

UL 997 (1995) Wind Resistance of Prepared Roof Covering Materials

#### 1.2 ROLE OF RFP SPECIFICATIONS AND DRAWINGS

#### 1.2.1 Specifications

The Division 1 specification sections included with the Request For Proposals (RFP), shall be included as part of the first submitted design specifications without revision, except for those allowed in Section 01160, "Design Documents." Requirements for materials, methods, and systems anticipated for the required design and construction shall be specified in Contractor prepared Divisions 02 through 16. Materials, methods, or systems used in this project design shall comply with these specification sections.

If different materials, methods, or systems are proposed for this project design which are at variance with the RFP specifications, and are approved by the Contracting Officer in accordance with Section 01160, "Design Documents", new specifications and drawings for that work shall be provided by the Contractor in compliance with Section 01160, "Design Documents."

If additional materials, methods or systems are required which are not included in the RFP specifications, new specifications, and drawings for that work shall be provided by the Contractor in compliance with Section 01160, "Design Documents."

## 1.2.2 Drawings

The design and design data indicated on the RFP drawings show existing conditions to be verified by the Contractor prior to starting demolition, design work, and/or construction work. The Contractor shall provide drawings to fully comply with the RFP design/build criteria, including that specified in this section, and the documentation requirements specified in Section 01160, "Design Documents."

## 1.2.3 Precedence

In the event of conflict or inconsistency between provisions of the various portions of this contract (the reconciliation of which is not otherwise provided for herein), precedence shall be given in the following order. The provisions of a particular portion shall prevail over those of a subsequently listed portion.

- a. The provisions of the Requests For Proposal (RFP) issued in connection with this contract including all addenda, amendments, or other modifications issued thereunder.
- b. The Government reviewed Contractor-originated design drawings and specifications, except to the extent that any variation therein has been specifically approved in writing pursuant to the provisions of

Section 01160, "Design Documents."

#### 1.3 VALUE ENGINEERING

Notwithstanding the provisions specified in the Contract Clause, "Value Engineering-Construction," the Contractor will only be permitted to value engineer the requirements specified and indicated in the RFP solicitation documents.

#### 1.4 ENERGY EFFICIENCY

This project shall be designed and constructed in an environmentally responsible manner, utilizing sustainable design concepts, systems, materials, and equipment selections that promote energy-efficiency and water conservation. The unit designs shall emphasize low maintenance construction materials, vandal resistance, reduced energy consumption, water resource conservation and life cycle economics. The use of durable and low maintenance materials will be a focus of the Government's evaluation.

Sustainable design includes life-cycle consideration of resource conservation, use of renewable resources, material and equipment durability, recycling, and reduced operations and maintenance costs. All construction projects shall be designed and constructed using cost effective Sustainable Design elements. The design and functionality of the building thermal envelope shall be based on a comprehensive analysis that includes the building envelope construction and the energy efficiency of the equipment provided.

The project should be designed and constructed to achieve the following goals:

- 1. Optimize facility design for the lowest achievable energy consumption based on a total life cycle cost analysis and consideration of all appropriate energy conservation strategies, products, features, and materials.
- 2. The homes shall meet the requirements and be provided with Energy Star Certificates. Wherever possible select products bearing the Energy Star Label. See the Government's web site at http://www.energystar.gov/ for a listing of products and for guidelines regarding Energy Star Partners.
- 3. Minimize adverse affects to the environment through use of materials and building products that are made from recycled materials or that can be recycled at the end of their useful life. Use materials and products with low embodied energy content; and use materials that do not produce harmful environmental effects during their manufacture, use, or disposal.
- 4. Maximize occupant comfort and health by providing a pleasing in-door living environment and high quality indoor air conditions.
- 5. Minimize land-filling requirements and maximize resource use

through an aggressive construction waste management and recycling program. Aspects of sustainable development have been included in the technical specifications of this RFP. The successful Offeror shall improve on these minimum requirements to provide environmentally sensitive and cost efficient housing that meets or exceeds all of these goals and that incorporates the best sustainable development practices.

#### 1.5 DESIGN RELATED PERMITS

Timely acquisitions of all necessary design and construction related permits shall be the responsibility of the Contractor. As some permit process times take 6 months or more, the Contractor shall immediately begin working on the permits so as not to delay completion of the project. The list of Contractor obtained permits for Contractor-originated civil design should consider, but not be limited to, the following:

- a. Erosion and Sediment Control Plan Approval
- b. Pollution Discharge Elimination System Stormwater Permit
- c. Water System Approval
- d. Sanitary Sewer System Permit
- e. Stormwater Management Plan Approval/Compliance

### 1.6 ADDED VALUE ITEM(S)

The Government defines the term "Added Value" as those items, features and/or materials that are not required as minimum, but that the Government desires to have integrated as part of the housing unit design solution. These "added value" items, materials and/or features, if provided by the Offeror, should add no extra cost to the project budget. The "added value" items, materials and/or features have been prioritized. All other materials, features and/or items specified in this section and Section 01155, "Facility Program Requirements" are minimum requirements and must be provided by the Offeror in order to consider the proposal responsive. Refer to Attachment 1, "Priority List & Added Value Matrix" at the end of this section for details.

## 1.7 PHASING PLAN

Phasing for Slocum Village has been developed to permit the occupancy of existing facilities while a portion of the site is under construction for replacement housing. Phase I is programmed for the demolition of a minimum of 278 units and a maximum of 347 units in Slocum Village and the construction of a minimum of 270 and a maximum of 347 replacement units and their associated neighborhood facilities. Hancock Village is programmed only for the demolition of 167 dwelling units under Phase ID. The demolition in Hancock Village will be done after all the construction work has been completed in Slocum Village. Refer to drawings under separate cover. Any units demolished and replaced above the minimum number required shall be located in the area designated as Phase II. Phase II is not part of this RFP, unless the Contractor demolishes and replaces additional units as an added value.

Phase I, in Slocum Village is divided into three sub-phases (Phase IA, IB,

and IC and additional units) in order to limit the number of units required to be unoccupied for replacement at one time. No more than 101 existing units shall be turned over to the Contractor at one time for demolition and replacement construction. At all times, the selected Contractor shall maintain utility service for the Slocum Village occupied units during construction of replacement housing.

The number and size of the units to be demolished in Slocum Village in each of the sub-phases are as follows:

Unit	Gross	Phase	Phase	Phase	Total	Phase IC	Total
Type	Area	IA	IB	IC	(min.)	Add'l Units	(max)
	(Approx.)						
1-BR	648 SF	0	0	0	0	6	6
2-BR	847 SF	67	55	66	188	42	230
(1 ST	)						
2-BR	940 SF	67	55	66	188	42	230
(2 ST	)						
3-BR	992 SF	20	36	14	70	18	88
4-BR	1436 SF	14	6	0	20	6	26
Total	Phase I	101	97	80	278	72*	350**
					(min.)		347(max.)

<sup>\*</sup>Of these 72 units, the Contractor shall select up to 69 dwelling units and obtain Government approval.

The number and size of the units to be demolished in Hancock Village in Phase ID is as follows:

Unit Type	Gross	Area	Phase ID
	(Appro	ox.)	
One-Bedroom	954	SF	19
Two-Bedroom	1122	SF	91
Three-Bedroom	1312	SF	56
Four-Bedroom	1908	SF	1
Total			167

Phase I, the subject of this RFP replacement Project, consists of units within an existing 'sewer-shed' to minimize disruption of sewer service to other units within Slocum Village. The remaining Phase I units and Phase II units are at the 'top' of an existing adjacent 'sewer-shed' and therefore units can be demolished while the remainder of the site continues to be served by the existing sewer system.

During Phase I and throughout construction, the Contractor shall be required to maintain utility service to the Graham Barden Elementary School and pedestrian access to the school from the occupied units within Slocum Village. Continued pedestrian access shall be accomplished by construction of a temporary or permanent trail located at the perimeter of the new construction (but fenced and outside the construction area) to provide a safe, dedicated, route for children to walk to the school during demolition and replacement construction.

<sup>\*\*</sup>Of these 350 units identified, the Contractor shall  $\underline{\text{only}}$  demolish up to 347 dwelling units.

Phase IA encompasses the north end of the site. The units are predominantly north of Jackson Drive, and include the units on the north side of Jackson Drive (113-149 Jackson Drive, odd numbers). Based on existing conditions and the Master Plan, Phase IA contains 101 units to be demolished and the Master Plan shows 135 replacement units for construction. The units to the north of Jackson Drive are: 74-102 Cedar Drive, even-numbered addresses, 85-139, odd numbered addresses, and the entirety of Astor, Azalea, Laurel, and Poppy Courts. Roadways included in Phase IA are Jackson Drive west of Lilac Court, Cedar Drive north of Jackson Drive and any cul-de-sacs or drives constructed off of these sections of the streets. The northernmost intersection of Jackson and Cedar will be included in this phase, while the intersection of Lilac and Jackson will not. Phase IA shall also include construction of the new sewer lift station.

Phase IB, immediately adjacent to the south of Phase IA, contains 97 units to be demolished and the Master Plan shows 101 replacement units for construction.

Phase IB includes 106-134 Jackson Drive (even numbered addresses), 24-72 Cedar Drive (even numbers), 23-83 Cedar Drive (odd numbers), and the entirety of Iris, Lilac, and Primrose Courts. Roadways included in Phase IB are Cedar Drive from the intersection with Holly Drive, including the Holly/Cedar intersection, to the northernmost intersection with Jackson Drive and any cul-de-sacs or drives constructed off of these sections of the streets.

Phase IC contains the balance of the units and neighborhood construction for Phase I and the 6.5 acre park facility at Cedar and Holly Drives. The final phase of this Project contains 80 units to be demolished and 34 units for replacement construction, based on the Master Plan provided.

Phase IC includes 70-104 Jackson Drive (even numbers), 69-111 Jackson Drive (odd numbers), 1-21 Cedar Drive (odd numbers), and the entirety of Myrtle Court. Roadways included in Phase IC are Jackson Drive from Cedar Drive to Lilac Court--including the southernmost Jackson/Cedar intersection and the Jackson/Lilac intersection--and any cul-de-sacs or drives constructed off of this section of Jackson Drive.

If the Contractor is to demolish and replace units above the minimum number required, he shall identify the units and area for demolition and construction within Phase II as shown on the Master Plan for approval by the Contracting Officer. All requirements as set forth in this RFP shall apply to demolition and construction of all units and associated neighborhood improvements. This RFP has identified the demolition area. Refer to drawings for demolition area. The Offeror may provide up to 77 additional units by demolishing and building on the site of up to 69 of the 72 following units: 22 Cedar Drive; 2-38 Holly Drive (even numbers only); 63 and 65 Mimosa Drive, and all of the units on Rose and Rosebay Courts.

Phase ID includes the demolition of 167 units in Hancock Village. These units are located on the outside perimeter of Hancock Village. Units to be demolished are: Cunningham Place, all units; 3-7 Fikes Drive (odd numbers

only); 66-82 Fikes Drive (even numbers only); 1-5 Geiger Avenue (odd numbers only); 10-112 Henderson Avenue (even numbers only); 71-97 Henderson Avenue (odd numbers only); 1-47 Rowell Circle (odd numbers only); 4-72 Rowell Circle (even numbers only); 1-15 West Moret Avenue (odd numbers only), and 2-24 West Moret Avenue (even numbers only).

Future phases, not necessarily part of this RFP project are programmed for future replacement of the remaining units at the Slocum Village family housing area. Phase II, located in the center of the site south of Phase I, shows construction of an additional 213 units and Phase III includes 217 replacement units based on the Master Plan. Total replacement units shown on the Master Plan is 700 dwelling units.

#### 1.8 DEMOLITION WORK

#### 1.8.1 Hazardous Materials Removal

A hazardous materials survey was conducted at Slocum Village and Hancock Village in April 2001. The hazardous material report and the drawings are submitted under separate cover for reference. The report and drawings identify the locations of hazardous materials present. The survey determined the presence of asbestos-containing materials, lead-based paint, PCB-containing light ballasts, mercury-containing fluorescent lamps, and thermostats in housing units at Slocum Village and Hancock Village. Refer to drawings for locations. The Contractor shall base his bid on the survey report findings for the 124 surveyed units and assume that the 321 non surveyed units contain 100 percent of the possible asbestos containing materials, as depicted for each unit type on the drawings. After the contract award, the Contractor may provide for his own inspection of any or all of the non-surveyed units. This inspection may benefit the Contractor by minimizing abatement quantities.

Prior to building demolition, the contractor shall provide for the removal and disposal of regulated asbestos-containing materials and PCB-containing ballasts in accordance with all applicable federal, state and Navy requirements. Mercury containing fluorescent lamps and mercury-containing thermostats shall also be properly removed and recycled by the contractor prior to demolition. Contractor shall assess the potential for employee exposure to lead during demolition activities. The contractor shall provide all necessary engineering controls, personal protective equipment and exposure monitoring as required by applicable federal and state regulations during hazardous materials abatement work.

Specifications providing for the proper removal and disposal of regulated asbestos-containing materials, lead-based paint, PCBs and mercury-containing items shall be submitted by the contractor for approval by the government prior to initiating hazardous materials abatement work.

The Contractor is required to test all new units for radon after construction is complete. The Contractor will be required to provide mitigation design and system installation if measured radon levels exceed the established federal action level.

#### 1.8.2 Civil and Site Work Demolition

## 1.8.2.1 Hancock Village

Demolition shall include only minimal site work. Streets, sidewalks adjacent to streets, and open space areas shall be left in place after demolition of the dwelling units. Major recreation facilities such as tennis/basketball courts and the handball building shall remain in place complete with their existing utility service to be maintained. The demolition shall include, but not be limited to, the following:

- 1. Smaller recreation facilities such as the small existing playgrounds within the area of demolished dwelling units shall be removed from the site and the equipment, in undamaged and reuseable condition, shall be turned over to the Station for disposition.
- 2. Underground utilities serving the demolished units shall be capped at slab and abandoned in place. Water mains shall be shut off to the demolished units. The Contractor shall coordinate with the electric, phone, and CATV service providers to determine procedures for terminating service at the units scheduled for demolition. The Contractor shall coordinate with MCAS Cherry Point to determine procedures for terminating sewer and water services to the units scheduled for demolition.
- 3. Lead walks, foundation plantings, and other lot improvements shall be demolished and removed.

## 1.8.2.2 Slocum Village

Demolition shall include removal of all associated neighborhood site facilities that are programmed for replacement in Section 01158 "Design/Build Criteria", and are located within the area of operation designated as Phase I. Demolition of utilities must consider the provision to maintain service to existing facilities to remain. The demolition shall include, but not be limited to, the following:

- 1. Remove all curb, gutters, sidewalks, and storm drain inlets in existing collector streets (Cedar Street and Jackson Drive). Remove the travel surface of collector streets to a depth recommended by the geotechnical report.
- 2. Remove all parking lots including the curbs, sidewalks, paving and sub-base material.
- 3. Remove all sidewalks and trails including lead walks that provide access to dwelling units. Do not remove or demolish the trail/pedestrian bridge over Slocum Creek.
- 4. Remove all recreation areas and equipment such as courts areas and playgrounds.
- 5. Remove all street furnishings such as telephone booths,

signage, lighting, mail boxes, fencing, and appurtenances. Coordinate with utility providers for demolition of telephone, lighting CATV, and electric service.

- 6. Remove all underground sanitary sewer lines to individual dwelling units. There shall be a four-foot maximum depth for manhole structures to be removed. Manhole structures at a greater depth shall be abandoned in place once they are capped and filled to ensure site surface stability based on recommendations from the geotechnical report. Remove any manholes that will no longer be needed in the renovated sewer system.
- 7. Remove all potable water service lines, valves, and connections that serve individual dwelling units. Water mains deeper than four feet from the proposed finish grade may be abandoned in place if capped and filled to ensure site surface stability based on recommendations from the geotechnical report.
- 8. Remove any storm drain facilities such as storm drain pipes, manholes, and outfalls.

#### 1.8.3 Building Demolition

For additional information on existing conditions that may affect demolition procedures, refer to Attachment 32, "Existing Conditions from the "Site Investigation Report for Hancock and Slocum Villages Housing Project" and Demolition drawings included under separate cover.

### 1.8.4 Architectural Demolition

## 1.8.4.1 Hancock Village

Existing single and duplex one-story Wherry units in Hancock Village shall be removed completely including concrete slabs. Existing foundation may stay in place if applicable. The demolition shall include, but not be limited to the following:

- 1. Remove building structure completely, including concrete slab;
- 2. Remove exterior wall system completely;
- 3. Remove roof structure and roof coverage;
- 4. Remove all exterior doors completely, including frames, hardware, and screen doors;
- 5. Remove all windows completely, including frames, sills, stools, insect screens and frames and window treatment;
- 6. Remove screened-in porch, exterior storage and laundry completely including roof and wall system and concrete slab;
- 7. Remove all interior walls, ceilings, doors, frames, and hardware,
- 8. Remove all interior finishes, including kitchen and bathroom cabinetry, closet shelving and rods, and
- 9. Remove bathroom fixtures and accessories.
- 10. Remove lead walks and concrete stoops.

## 1.8.4.2 Slocum Village

Existing duplex and multi-plex one-story and two-story Wherry units in Slocum Village shall be removed to three feet below grade. The demolition shall include, but not be limited to the following:

- 1. Remove building structure completely, including concrete slab, and foundation;
- 2. Remove exterior wall system completely;
- 3. Remove roof structure and roof coverage;
- 4. Remove all exterior doors completely, including frames, hardware, and screen doors;
- 5. Remove all windows completely, including frames, sills, stools, insect screens and frames and window treatment;
- 6. Remove screened-in porch, exterior storage and laundry completely including roof and wall system and concrete slab and foundation;
- 7. Remove all interior walls, ceilings, doors, frames, and hardware;
- 8. Remove all interior finishes, including kitchen and bathroom cabinetry, closet shelving and rods, and
- 9. Remove bathroom fixtures and accessories.
- 10. Remove lead walks and concrete stoops.

## 1.8.5 Mechanical, Electrical and Plumbing Demolition

## 1.8.5.1 1.8.5.1 Hancock Village Mechanical/Plumbing

- 1. Remove split system heat pump HVAC system completely, including ductwork, piping, and controls;
- 2. Remove and cap sanitary, waste, and vent below grade;
- 3. Remove and cap domestic water piping below grade, and
- 4. Remove water heater.

## 1.8.5.2 Slocum Village Mechanical/Plumbing

- 1. Remove split system heat pump HVAC system completely, including ductwork, piping, and controls;
- 2. Remove all sanitary, waste, and vent piping located up to four feet below grade;
- 3. Remove domestic water piping located up to four feet below grade, and
- 4. Remove water heater.

## 1.8.5.3 Hancock Village Electrical

- 1. Coordinate disconnect of electrical power, telephone, and cable television with public utilities serving the site.
- 2. Remove smoke detectors, fluorescent lighting fixture ballasts and mercury vapor lamps. Dispose of in accordance with federal hazardous material disposal regulations.
- 3. Remove the remainder of the electrical materials as part of the general demolition of the buildings.
- 4. Remove smoke detectors.

## 1.8.5.4 Slocum Village Electrical

- 1. Coordinate disconnect of electrical power, telephone, and cable television with public utilities serving the site.
- 2. Remove smoke detectors, fluorescent lighting fixture ballasts and mercury vapor lamps. Dispose of in accordance with federal hazardous material disposal regulations.
- 3. Remove the remainder of the electrical materials as part of the general demolition of the buildings.
- 4. Remove smoke detectors.

#### 1.9 MASTER PLAN

A Master Plan (see Drawings included under separate cover)has been provided as a part of this RFP to coordinate the planning of this project with future phases of replacement housing at the site, and to provide the Contractor with an example of how the site design program can be accomplished to the satisfaction of the Station. The Contractor shall generally conform to this Master Plan in the preparation of the site plan for this project or submit a revised Master Plan in support a proposed site plan.

The Master Plan assumes the eventual replacement of all 775 housing units at Slocum Village with approximately 700 townhouse units at an approximate 1:1 ratio (existing to proposed) of two-bedroom, three-bedroom, and four-bedroom dwelling units. This Project represents the first phase of implementation of the Master Plan including demolition of a minimum of 278 dwelling units and a maximum of 347 units (and associated facilities), replacement with 270 townhouse units, and the construction of all associated ancillary neighborhood facilities for a complete and functional neighborhood replacement project. It is assumed that the 775-unit replacement program can occur within the currently developed site of approximately 138 acres of Government property above the mean high water line associated with nearby Slocum Creek. No additional clearing of wooded areas is anticipated by the Master Plan.

All dwelling units that are not being replaced as a part of this project shall remain occupied during the demolition and construction of new housing. This replacement project shall be designed so that vehicular circulation, pedestrian circulation, utilities, and access to occupied existing units shall be maintained in a functional capacity during construction. Pedestrian circulation and all utility service shall also be maintained to the adjacent Barden Elementary School during demolition and construction. Existing roadways off-site through adjacent private sector residential neighborhoods may provide alternate vehicular access to the school. Vehicular circulation, utility service, and access shall also be maintained to the on-site sanitary sewer treatment plant operated by the City of Havelock, NC, and the elevated storage tank, as well as other business and users along U.S. Route 70, during demolition and construction.

To facilitate the requirement to maintain sanitary sewer service to the above facilities a new sewer lift station, designed to serve the project replacement housing, shall be provided as a part of this project during the

initial phase of construction. Occupied facilities shall continue to be served by the existing gravity sewer system and the existing lift station, located on-site adjacent to the City of Havelock sewer treatment plant. The existing sewer treatment plant on-site does not provide service for the site itself. Sanitary sewer for Slocum Village units and the elementary school are currently conveyed to the Station sewer treatment plant located across Slocum Creek on the main Station by way of a force main located at the existing pedestrian bridge crossing over Slocum Creek.

## 1.9.1 Proposed Dwelling Units

Dwelling units shown on the Master Plan are two-story townhouses based on a generic footprint of 25 feet by 40 feet that will accommodate a two-, three-, or four-bedroom unit type. All units include a one-car attached garage, single driveway for one additional parking space, and a patio with privacy screen between units. Units have been sited as four, five, and six unit buildings with horizontal offsets in the front facade to create identity for the individual unit. A total of 700 replacement dwelling units are shown on the Master Plan.

#### 1.9.2 Vehicular Circulation

The Master Plan assumes that existing collector roadways will remain in their current horizontal alignment to facilitate phasing and the required occupancy of facilities that are not currently being replaced. Therefore, Holly Drive, Jackson Drive, Cedar Drive, Oak Drive, and Poplar Drive are shown to remain in their current location at 32 feet wide (pavement width), with two travel lanes and parking on both sides. The only exception to this is a proposed minor relocation of Jackson Drive adjacent to the existing sewer plant to provide space for a landscaping to buffer this facility from the neighborhood. This minor relocation of Jackson Drive is programmed for future phases and is not part of this RFP.

Access to the neighborhood is shown to remain in the current location as existing at the two signalized intersections with U.S. Route 70. Both entrance areas are programmed for expansion to 4-lanes with a divided median for an improved sense of arrival and vehicular circulation. Entrance features, guard house, signage, a community center, and walls/fencing along the Route 70 boundary are programmed for future phases in these locations.

Local roadways providing direct access to dwelling unit driveways are shown as new 28 foot wide loop streets (pavement width) with parking on one side. These local streets are designed to discourage through traffic by always looping back to the same collector road, and by limiting the number of units on each loop. Intersections at collector streets are located across from other loop streets or offset a minimum of 60 feet at the centerline. This creates housing clusters that reinforce a sense of identity for residents. This design approach also minimizes vehicular driveway access to the collector roadways to improve circulation, parking, and the visual quality of the main roadways.

## 1.9.3 Pedestrian Circulation

Pedestrian circulation for the Master Plan assumes sidewalks on both sides of collector roadways and proposes the construction of a hiker-biker loop trail system independent of the street network. The trail system is designed to provide safe and attractive pedestrian and bicycle access between housing clusters and to destinations such as the elementary school and recreation facilities. The trail system incorporates retention of the trail connection to the main Station via an existing pedestrian bridge across Slocum Creek off of Jackson Drive.

## 1.9.4 Open Space and Recreation Facilities

Recreation facilities for the Master Plan have been designed to be comparable to similar private sector residential neighborhoods. Facilities have been concentrated in three locations central to housing clusters providing convenient access to all residents. In addition to the open space and Community Center facilities (future phases) programmed for the entrance area at Holly Drive, two internal parks have been provided in addition to the general open space at the perimeter of the site and around housing clusters. The larger park, programmed as a part of Phase I, is located along Cedar Drive at Holly Drive, and is approximately 6.5 acres in size. Facilities include two playgrounds (one new and one furnished with existing equipment), one sand volleyball court, two basketball courts, one soccer field, one group picnic shelter, six individual picnic shelters, and an access drive with off-street parking. The hiker-biker trail system provides pedestrian access to these facilities.

Future phases include the open space facilities along the Route 70 frontage, another smaller park at Poplar and Oak Drives, and an open space area adjacent to the sewer plant that could be improved with recreation facilities as well. Approximately 22% of the site is dedicated to open space improved with recreation facilities.

#### 1.10 EROSION AND SEDIMENT CONTROL PLAN

The Contractor shall provide an erosion and sediment control plan in accordance with Chapter 6 of the North Carolina Sediment Control Commission Erosion and Sediment Control Planning and Design Manual (NCSCC ESCM). The completed plan shall be approved by the State.

The plan shall be submitted in accordance with Section 01330 of the RFP, including pre-construction submittals. The plan should include, but is not limited to, methods for site preparation, surface stabilization, runoff control measures, runoff conveyance measures, outlet protection, inlet protection, sediment traps and barriers, stream protection where necessary, and other related practices. The methodology and controls shall be as stated in the NCSCC ESCM, Chapter 6.

The Contractor shall install and maintain the erosion control devices per the approved erosion control plan during the entire duration of the project. The Contractor shall inspect control devices after each rainfall and daily during prolonged rainfall. Remove sediment deposits after each rainfall or when sediment reaches approximately one-half the barrier height. Immediately repair damaged erosion control devices and damaged areas around and underneath the devices. Maintain erosion control devices

to assure continued performance of their intended function. Modify the erosion control plan as required to control problem areas noticed after each inspection. Modifications shall be approved by the Contracting Officer.

At the completion of the job, or when directed or approved by the Contracting Officer, temporary erosion control devices shall be removed. Erosion control devices and areas immediately adjacent to the device shall be filled (where applicable), shaped to drain and to blend into the surrounding contours, and provided with permanent seeding. Erosion control devices may remain in place after job completion when approved by the Contracting Officer.

#### 1.11 CIVIL AND SITEWORK DESIGN

## 1.11.1 Design Requirements Overview

All site work shall be provided to produce a complete and finished project;

- a. The Contractor shall verify that the locations and inverts of all site utility lines are coordinated with building utility lines. The Contractor shall make adjustments to the locations and inverts indicated in accordance with applicable codes and standards.
- b. Contractor's electrical designer shall coordinate electrical site utilities with CP&L, Sprint telephone, and Time Warner cable.
- c. Contractor's civil designer shall provide complete site design to include site layout, utilities, pavement, grading, and drainage.

A half-size copy (11 inches by 17 inches) of the existing conditions (Neighborhood Analysis Plan of the site accompanies this RFP Document under a separate cover for reference purposes only. The Contractor is required to verify all existing conditions of the site. It is the Contractor's responsibility to provide a topographic survey of the site and obtain all additional information that may be required for a completed design and construction project.

The Contractor shall provide all civil and site design services for the housing replacement project. This includes, but is not limited to; soil borings, soil sampling and laboratory analysis, geotechnical study, topographic survey, site planning, construction layout, site clearing and grubbing, demolition, excavation, potable water utilities, electrical utilities, fire protection utilities, sanitary sewage utilities, grading, storm drainage, earthwork, turf establishment, erosion and sediment control, bituminous and portland cement concrete pavements, site furnishing, relocation of utilities, all necessary site visits (both during the design and construction phases by engineers and technicians), research of drawing files at the activity's office and at LANTNAVFACENGCOM (Code 04), meetings, soils investigation, travel, drawings, specifications, computer-aided design, testing, and quality control.

Maps of the existing utility distribution systems are included in this RFP under a separate cover. Extra copies of utility distribution maps can be obtained from the Station. Location of existing utilities indicated on the

site survey and utility maps is approximate only. The Contractor shall scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. The Contractor shall contact commercial utility companies (i.e.; telephone, cable TV, etc.) to obtain commercial utility information. The Contractor shall obtain approved digging permits prior to excavating. Request for digging permits shall be in accordance with current MCAS Cherry Point policies.

All design work shall be in accordance with applicable codes and standards, including those listed in Paragraph 1.1 of this specification. For general design requirements refer to LANTNAVFACENGCOM Code 04's "Guide For Architect Engineer Firms Performing Services for the Atlantic Division Naval Facilities Engineering Command", the "Civil Engineering Design Requirements (supplement to A/E Guide)", and MIL-HDBK-1006/1A.

## 1.11.1.1 Site Planning

The Contractor shall provide all site planning based on the Master Plan provided with this RFP. This process shall include an interdisciplinary approach. The Contractor is required to analyze the existing site conditions (i.e.; topography, utilities, plant materials, pedestrian and traffic patterns, land use, community facilities, off-site workplaces, etc.) and provide a site layout that results in an aesthetically pleasing and functional design. Site design shall be based on and include; orientation, site organization, spatial balance, character and scale, compatibility, life safety, circulation systems, view of the site, buffer zones, wind and noise control, land forms (i.e.; mounds, swales, etc.), lawns and shaded areas, active and passive outdoor recreation, vehicular access, parking, utility corridors, fire protection access, site lighting, site furnishings, finish floor elevations, storm drainage, landscaping, etc.

Additional specific features that are to be included are: hiker-biker trails, a pavilion for 15 percent of residents, site furnishings (i.e.; trash receptacles, seats, benches, picnic shelters, grilles, etc.), volleyball courts, basketball courts, children's playgrounds, directional signs (pedestrian and vehicular), and traffic control devices. The minimum finished floor elevation of new permanent buildings shall be designed to prevent flooding and provide adequate drainage away from buildings. All new "consumable" type utility systems shall be designed so a single meter monitors each utility (i.e.; one meter per utility) with the exception of the master water meters that were installed in 1999 and shall be re-used. Utility meters for individual units is not required, however meter bases shall be provided for individual units for potential use in the future. The meter base shall be located on the side of each building and shall be easily accessible, but not obvious.

The following spatial design standards shall be incorporated into the project site plan:

a. Housing units shall be two-story townhouse dwellings attached in buildings of no more than six units each. Sixty-two (62) percent shall be two-bedroom units, 31 percent shall be three-bedroom units, and seven (7) percent shall be four-bedroom

units.

- b. Five (5) percent of the total units shall be handicapped accessible one story units. Handicapped accessible units shall be a mix of bedroom types and may be one-story attached, semi-attached or detached dwelling units.
- c. Minimum front yards shall be 25 feet to the sidewalk, side yards (between buildings and roadways) shall be a minimum 25 feet however, the side yard of one building may overlap the side yard of an adjacent building. Strict adherence to the minimum side yard is not required however, the site location of dwelling units shall provide a functional, spacious design that will permit emergency access to the rear of buildings.

Rear yards shall be a minimum 15 feet however, buildings shall not be closer than 60 feet rear to rear, and 25 feet side to side and 60 feet rear to side. Rear yard patios shall be a minimum of 10 feet by 12 feet and shall be screened by a six-feet high by eight feet long vinyl board on board privacy screen between each unit. A larger patio may be appropriate for three- and four-bedroom units. In addition to the privacy screen, provide a five-foot high vinyl fence with a gate to enclose the 15' rear yard of each dwelling unit. The rear yard fence enclosure shall include the width of the unit by a 15 foot depth. The five-foot high fence enclosure shall start at the termination of the eight-foot long six-foot high privacy screen between the units and continue around the remaining open sides of the rear yard space. The color and design of unit fencing shall be selected to complement the unit facade materials as approved by the Contracting Officer.

- d.Parking shall be provided at the minimum rate of two (2) off-street spaces per dwelling unit and one additional guest space per unit on-street. All dwelling units shall have an attached one-car garage with access to the street. Additional parking shall be provided where feasible in parking areas off of local loop streets. Parking spaces shall be a minimum of nine-foot by 18-foot in size and unit driveways shall be a minimum of 10 feet wide and deep enough to accommodate one of the two required off-street spaces exclusive of the front sidewalk. Unit driveway connections to the collector streets shall be minimized.
- e. Lead walks shall be provided from the unit entry to the front sidewalk or to a driveway that connects to the front sidewalk. Sidewalks adjacent to the streets shall be a minimum of five feet in width and all other walks may be four inches in width. Sidewalks shall be provided on both sides of collector roadways and on one side of loop streets or local roadways where unit driveways attach to the street. Provide handicapped ramps at all locations where the sidewalk system intersects a street. Pedestrian crosswalks shall be provided where sidewalks cross collector roadways. Crosswalks shall be striped with thermoplastic striping or may be surfaced with special paving at focal areas.

- f. A minimum 25 foot buffer shall be provided to the Slocum Creek high water line. A minimum 50 foot buffer shall be provided to the west property line where existing single family homes in the private sector are located.
- g. All finished floor elevations shall be at least one foot higher than the surrounding ground. Contractor shall provide positive drainage at all times. Imported fill material should be considered to achieve good drainage.
- h. Slocum Village is currently served by two master water meters that were installed in 1999 by contract N62470-98-C-6217. They are Ultrasonic Type Meters made by "Panametrics, Model Df868". They are installed in an underground vault. Remote monitoring may be able to be added. Sales engineer was Reggie Cockman at 919-942-6801. There is no head loss associated with these meters. The approximate location of the vaults is on the west side of Slocum Creek, where the 8" water line enters the Slocum Village area.

## 1.11.2 Site Clearing, Earthwork, and Drainage

Prior to site clearing, the Contractor is required to construct and maintain a 10-foot high privacy and security fence around the construction site perimeter. Include matching gates and appurtenances as required. Submit the proposed location of the fence and gates to the Contracting Officer for approval. The project site has numerous mature trees. The Contractor shall clear and grub all trees and vegetation necessary for construction and shall save as many trees as possible. The Contractor shall delimb and cut all trees approved for removal and dispose of all debris off-site at a location approved by the Contracting Officer. All stumps within the limits of clearing shall be grubbed and hauled off-site by the Contractor.

The Contractor shall obtain the services of a local Arborist and Registered Landscape Architect to mark trees for removal and preservation. The Contractor shall show all trees to be removed on the approved grading plan. The Contractor's topographic survey shall include an inventory of all existing trees larger than four inches dbh including species and size information. Preserve and protect all trees to remain (as shown on the approved plans) by installing tree protection devices to incorporate 75% of the root drip line. A tree protection device detail (five-foot fence) shall be shown on the approved grading plan, constructed in the field, and approved by the Contracting Officer prior to beginning any earthwork. The Contractor shall replace any tree shown for preservation on the approved plans that is damaged during construction. Replacement value shall be based on the size of the existing tree and approved by the Contracting Officer. Jurisdictional wetlands have been identified within the High Water Line of Slocum Creek adjacent to the project site by National Wetland Inventory Maps. Any disturbance for construction within the High Water Line shall require the Contractor to field delineate wetlands and have jurisdiction determined by local authorities.

The Contractor is responsible for obtaining subsurface soil information for

design purposes. General and select fill shall come from sources approved by the Contracting Officer.

The topography is relatively flat and some locations experience flooding during short duration, high intensity rain events. The Contractor shall provide active and passive storm water management facilities as required by the State of North Carolina DENR. To the extent possible, integrate permanent storm water quality passive facilities into the total site design to provide an aesthetically pleasing and harmonious landscape that minimizes the amount of impervious surfaces. Areas of site that contain greater than 30% impervious surfaces will require active storm water management facilities, such as, but not limited to the following: constructed stormwater wetlands, and wet infiltration basins. Areas of site that contain less than or equal to 30% impervious surfaces shall have passive storm water management facilities, such as, but not limited to the following: grassed swales, grass buffers, natural occurring vegetative buffers, ditches with 3:1 side slopes, etc. No collection systems (piping, paved ditches, ditches with 2:1 side slopes) are allowed in passive systems. Minimal piping may be allowed per stormwater management analysis. Contractor shall provide pipe sizing and hydrologic grade-line analysis for all stormwater piping. Design and construction shall be in accordance with MIL-HDBK-1005/2 (Hydrology), NCDH GDSHD, NCSCC ESCM, and the "North Carolina Erosion and Sediment Control Laws and Regulations.".

Provide positive drainage away from the building(s) and other facilities. For the first 10 feet from the building, provide a minimum slope of 0.5%. Minimum surface drainage criteria for the following surfaces: Pave Bituminous surface - 2%; Concrete surface - 2%; Travel lane cross slopes - 2.08%; Swales - 0.5%; Longitudinal gutter pan slope - 0.4%.

## 1.11.3 Soil Treatment

Provide soil treatment for termite control in accordance with Naval Facilities Guide Specification (NFGS) Section 02361, "Soil Treatment for Subterranean Termite Control."

## 1.11.4 Water System

The Contractor shall determine domestic and fire demands for the facilities and shall verify the design of all components of the domestic and fire protection supply systems in accordance with the North Carolina Administration Code, "Rules Governing Public Water Systems". The Contractor shall use existing ultrasonic master water meters that were installed in 1999. The Contractor shall obtain all necessary static pressure, residual pressure and flow characteristics of the existing distribution system by actual field tests. The water system design and construction shall be in accordance with MIL-HDBK-1005/7 (Water Supply Systems). The Contractor shall design the connections to the existing MCAS water system including the meter assemblies and necessary backflow-preventing devices. The Contractor shall coordinate the review and approval of the connection and check valve assembly with Cherry Point MCAS Water Department. The new water system shall connect the existing water line at the point of construction near Slocum creek, parallel to the footbridge. Contractor to verify size and material of existing line. The Contractor shall conduct flow and

pressure tests and provide design calculations that show the existing lines are capable of handling the additional flows. Calculations shall be prepared using a water system analysis computer program such as "WaterCAD", "KYPIPES", "EPANET", or the equivalent, and sealed by a registered professional civil engineer. Provide the fire protection water from an existing line running across Slocum Creek, parallel to the footbridge. Contractor to verify size and material of existing pipe. See the utility drawings included in this RFP under a separate cover for the location of existing water lines.

Provide all materials, equipment, labor, testing, and miscellaneous related items to provide water distribution mains and service lines to the buildings. Provide water distribution system materials, methods, and testing as specified below and in NFGS Section 02510 (Water Distribution) except concrete pipe, steel pipe, groove and shoulder type joints, and wet barrel fire hydrants are not permitted. Indicator posts, corporation stops, valve boxes, flange joint ductile iron pipe, check valves, and sleeve-type mechanical couplings are permitted as required and as specified in NFGS Section 02510 (Water Distribution).

# 1.11.4.1 Water Distribution System

The following materials used for the water distribution system are to terminate approximately five-feet from the building:

- a. Piping materials sized four-inches to 12-inches:
  - (1) Ductile-Iron, AWWA rated with cement-mortar lining.
  - (2) Polyvinyl Chloride (PVC) Piping, AWWA C900 with cast iron pipe equivalent outside diameter.

Joints and jointing materials shall be AWWA C111/A21.11 push-on or mechanical joints for ductile-iron pipe. Polyvinyl Chloride (PVC) pipe joint and jointing material shall be push-on ASTM D 3139. Compression-type joints/mechanical joints, can be used as joints between pipe and metal fittings, valves, and other accessories. Gaskets shall be provided.

- b. Piping materials less than four-inches:
  - (1) Copper Piping, ASTM B 42. Fittings, brass or bronze, FS WW-P-460, 125 pound.
  - (2) Copper Tubing, ASTM B 88, Type K, compression type joint ASME/ANSI-B-16.26.
  - (3) PVC Plastic Piping, minimum schedule 40, SDR to provide minimum 150 psi pressure rating. Fittings, ASTM D 2466.
  - (4) High Density Polyethylene (HDPE) piping, PE 3408, SDR 11 minimum, with heat fused joints and service taps.
- c. Gate Valves on buried pipe sized four-inches to 12-inches:

- (1) AWWA C509, resilient wedge, nonrising stem type with mechanical joint ends, and operating nut.
- d. Gate Valve smaller than three-inches:
  - (1) MSS-SP-80, Class 150, solid wedge, nonrising stem, and operating nut.

Flush and disinfect new water piping and existing water piping in accordance with AWWA C651.

All pipe and fittings shall bear the seal of National Sanitation Foundation for potable water.

Fire Hydrants shall be dry-barrel type, AWWA C502 or UL 246, or UL 246, 4-1/2 inches pumper connection and two 2-1/2 inches hose connectors. Fire hydrants will be spaced a maximum of 400 feet apart.

- 1.11.4.2 Field Quality Control for Water Distribution
  - a. Field Tests and Inspection

The Contracting Officer will conduct field inspections and witness field tests specified. The Contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing, except that water needed for field tests will be furnished as set forth in Section 01500, "Temporary Facilities and Controls". Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least five days after placing of the concrete.

## b. Testing Procedure

Test water mains and water service lines in accordance with the applicable specified standard, except for the special testing requirements given in paragraph entitled "Special Testing Requirements". Test ductile-iron water mains in accordance with the requirements of AWWA C600 for hydrostatic testing. The amount of leakage on ductile-iron piping with mechanical joints shall not exceed the amounts given in AWWA C600. No leakage will be allowed at joints made by any other method. Test PVC plastic water mains and water service lines made with PVC plastic water main pipe in accordance with the requirements of UBPPA UNI-B-3 for pressure and leakage tests. The amount of leakage of pipelines made of PVC plastic water main pipe shall not exceed the amounts given in UBPPA UNI-B-3, except that at joints made with sleeve-type mechanical couplings, no leakage will be allowed. Test water service lines in accordance with applicable requirements of AWWA C600 for hydrostatic testing. No leakage will be allowed at copper pipe joints, copper tubing joints, plastic pipe joints, flanged joints, and screwed joints.

# c. Special Testing Requirements

For pressure test, use a hydrostatic pressure 375 kPa greater than the maximum working pressure of the system, except that for those portions of the system having pipe size larger than two-inches in diameter, hydrostatic

test pressure shall be not less than 1400 kPa. Hold this pressure for not less than two hours. Prior to the pressure test, fill that portion of the pipeline being tested with water for a soaking period of not less than 24 hours. For leakage test, use a hydrostatic pressure not less than the maximum working pressure of the system. Leakage test may be performed at the same time and at the same test pressure as the pressure test.

#### 1.11.5 Sanitary Sewer

The gravity sanitary sewage collection system shall be designed and constructed in accordance with the NCDEHNR WGM. There is an existing force main from Slocum Village across Slocum Creek to the MCAS. A pump station shall be designed and constructed to connect to this force main. Contractor shall make every effort to keep the gravity sewer line shallow, while maintaining appropriate pipe slope. In areas where chemicals and other substances may be stored (including mechanical and electrical rooms), provisions should be made to prevent spills from entering the sanitary sewer systems. If there is process flow from equipment, discharge can be hard piped, with air gap, to the sanitary sewer. The Contractor shall provide design calculations that show the existing lines are capable of handling the required peak flows.

Provide all materials, equipment, labor, testing, and miscellaneous related items to provide sanitary sewage lines necessary for distribution and services to the buildings.

Deflection testing of plastic pipeline is not required. Hydrostatic pressure and leakage testing shall be provided by the Contractor.

Provide sanitary sewer lift station materials, methods, and testing as specified in NFGS Section 11312 (Package Lift Station) for underground lift station. The effects of corrosion shall be addressed in the design. A local audible and visual alarm shall be provided for high level, loss of main power, and no flow condition. Also, a remote alarm shall be provided in the lift station that is compatible with the existing MCAS Cherry Point telemetry system. Provide an emergency generator connection in accordance with state regulations. Provide other features as required by state, and Activity regulations. For the new lift station, a submittal for SD-19, Operation and Maintenance Manual, Data Package No.3 is required as specified in Section 01781, "Operation and Maintenance Data".

The Contractor shall connect to the existing force main with an accessible tapping sleeve and valve. Existing force main shall remain active at all times.

## 1.11.6 Storm Drainage

The storm gravity drainage collection system shall be designed and constructed in accordance with NCDH GDSHD and NCSCC ESCM. The new storm drain collection system shall connect to Slocum Creek with multiple outlet points. The Contractor shall provide design calculations that show the existing lines are capable of handling the additional flows. Calculations shall be sealed by a NC registered professional engineer. Design should emphasize passive storm water management facilities, such as, but not

limited to the following: grassed swales, grass buffers, natural occurring vegetative buffers, ditches with 3:1 side slopes, etc. Station prefers low-density option. No collection systems (piping, paved ditches, ditches with 2:1 side slopes) are allowed in passive systems. Open section swales shall be used along collector roads with the sidewalk located on the far side of the swale(away from road). Curb and gutter shall not be used on the collector roads and sidewalks shall be provided on both sides. See the Master Plan drawing for those roadways designated as collector roads. Closed section swales with curb and gutter on both sides shall be used along local loop roads. The sidewalk on the loop roads shall be along the outside of the loop (one side). Vehicle wash areas are not to be provided.

Provide all materials, equipment, labor, testing, and miscellaneous related items to provide storm drainage collection system necessary to drain the site and connect to existing storm drainage system. Provide storm drainage materials, methods, and testing as specified in NFGS Section 02630 (Storm Drainage) except the following materials shall not be allowed:

- (1) Clay Pipe and Fittings, and
- (2) Corrugated Plastic Piping.

## 1.11.7 Streets, Roads, and Walks

The design of streets, roads, and walks shall be in accordance with DM-5.5 (General Provisions and Geometric Designs for Streets, Design for Roads, Walks, and Open Storage Areas). Designs for streets, walks, and roads shall include adequate space for trees. The pavements shall be designed in accordance with DM-5.4 (Pavements). New traffic control devices (i.e.; signs, markings, etc.) shall be provided and installed in accordance with the United States Department of Transportation Federal Highway Administration's "Manual on Uniform Traffic Control Devices". New traffic control devices shall also be provided in the existing streets within the project site as necessary to provide complete traffic control to Slocum Village. Avoid having to provide traffic control lights (i.e. stoplights).

The design shall include measures to prevent and/or remedy accelerated deterioration of roads on and off the project site that are used as haul routes (i.e., roads degraded by the heavy use of heavily loaded vehicles shall be repaired as part of the construction).

Provide bituminous concrete pavement and portland cement concrete pavement, sidewalks, curbs and gutters, and miscellaneous related items in accordance with NFGS Section L-02741 (Bituminous Concrete Pavement) and NFGS Section 02752 (Reinforced Cement Concrete Pavement for Roads and Site Facilities), NFGS Section 02762 (Joint, Reinforcement, and Mooring Eyes in Concrete Pavement), and NFGS Section 02721 (Base Course for Rigid Pavement). Provide bituminous concrete pavement in accordance with NCDOT RS. The provisions in the NCDOT RS for measurement and payment do not apply. Contractor's North Carolina geotechnical professional engineer shall prepare a site investigation report, including pavement recommendations, soil borings, and laboratory testing as deemed necessary for project.

## 1.11.8 Fencing and Gates

Any fencing and gates shall be designed in accordance with ASTM SSFMP. The Contractor shall provide a five-foot high PVC/vinyl sight-tight privacy fence that completely encloses the rear yard of each housing unit complete with egress gate and all necessary appurtenances. Selection of fence and gate materials shall compliment the architectural features of the unit design; color and design to be approved by the Contracting Officer. The rear yard enclosed by the fence shall be a minimum of 15 feet deep, extend the full width of the dwelling unit, and enclose an outdoor concrete patio (minimum size 10 feet x 12 feet). A six-foot high, eight-foot long vinyl privacy screen between units also shall be provided as a minimum requirement.

#### 1.11.9 Construction Laydown Areas

Field office trailers, materials, and equipment may be stored on or off the site at a location to be coordinated and approved by the Contracting Officer. Storage and laydown areas up to five (5) miles from the construction site may have to be utilized. Storage and movement of these items shall not disturb existing trees and other features that are to remain. Trees shall not be cleared from the site for the sole purpose of developing laydown areas. Other laydown areas within the Slocum Village neighborhood, may be available, but are not guaranteed. Coordinate availability and other requirements with the Contracting Officer. Improvements for laydown areas (i.e.; fencing, gravel, etc.) shall be at no additional cost to the Government. Laydown areas shall be returned to their natural condition as directed by the Contracting Officer.

## 1.12 GEOTECHNICAL DESIGN

## 1.12.1 Geotechnical Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the geotechnical design and construction work shall conform to the applicable requirements of the following manuals, codes, and standards.

- a. NAVFAC DM-07.01
- b. NAVFAC DM-07.02
- c. NAVFAC DM-07.03

Provide materials, methods, and tests as specified in NFSG-02315 (Excavation and Fill). Create specifications as necessary to provide materials required by geotechnical engineer.

## 1.12.2 Geotechnical Site Data

The Contractor is responsible for all soil and foundation investigations. The Contractor's geotechnical engineer shall perform additional site investigation, soil borings, and laboratory testing as deemed necessary. The work shall be coordinated with the Contracting Officer and shall not interfere with normal base operations. The cost of geotechnical work shall

be included in the contract amount. Any paved section shall have a minimum of two-inch I-2 Asphalt.

Logs of exploration locations, soil borings, laboratory testing and investigations shall be prepared by a registered professional civil/geotechnical engineer, experienced in soil mechanics, who shall certify the adequacy of the soil and foundation aspects of the design, including but not limited to:

- 1) Earthwork construction;
- 2) Cut and fill slopes;
- 3) Pavements design for streets, pavements, recreation trails, courts, and facilities;
- 4) Surface and subsurface drainage;
- 5) Erosion and siltation prevention during and after construction;
- 6) Foundation and slope stability;
- 7) Settlement or expansiveness of soil;
- 8) Use of on-site soils for fill and backfill;
- 9) Depth of water table, and
- 10) Seismic analysis.

## 1.12.3 Assumed Foundation Type

For bidding purposes, assume the following regarding foundation design: shallow foundations similar to that of the existing structures; depth of frost penetration is 12 inches; depth of the groundwater table ranges across the project area from 12 inches below grade in the northern 400' section of Cedar Drive, to four to six feet (fluctuates) under normal circumstances in the remainder of the site.

## 1.12.4 Actual Foundation Type

The actual foundation type, capacity, etc. will be determined after contract award by the Contractor's geotechnical report based on the actual loads and geotechnical data. The Contractor shall bear all costs of the actual foundation provided

## 1.12.5 Geotechnical Engineer

The Contractor shall commission the services of a geotechnical consultant registered as a Professional Engineer. The geotechnical engineer shall be experienced with soil conditions in the Cherry Point, North Carolina region. The engineer shall evaluate the available data, obtain and evaluate additional data as required and prepare a report as described in Section 01160, paragraph "Geotechnical Report Submittal".

#### 1.13 LANDSCAPING DESIGN

## 1.13.1 Landscaping General Requirements

Provide a landscaping design by a Registered Landscape Architect on design drawings stamped by him/her. At a minimum, the landscaping design shall include the design requirements specified below.

#### 1.13.1.1 Planting and Vegetation

Develop plantings to create an aesthetically pleasing landscape that conserves water and resources while minimizing maintenance requirements. Plant selections shall be based upon drought tolerances, disease and pest resistance, cold and heat tolerances, and minimum maintenance requirements (i.e.; fruit, litter, etc.). Plant selection shall emphasize indigenous species from the Station's approved plant list.

- a. Provide new street trees at appropriate spacing along both sides of all new streets. Select street trees from the Station's approved plant list and choose species that do not produce litter such as the Japanese Zelkova or Willow Oak. Minimum spacing for street trees shall be 50 foot on center to include the preservation of existing trees wherever possible. The minimum size for installation of new street trees shall be 1-3/4 inch caliper.
- b. Provide open space planting to create shade and visual interest at focal points and recreation facilities. Use evergreen plant material where visual buffers are needed for screening purposes. Incompatible uses, undesirable views, utility structures, and parking areas are examples of site elements that should be screened. Emphasize tree planting rather than shrub or groundcovers. Ornamental flowering trees, shade trees, and specimen trees shall be used to define spaces, mitigate climate extremes such as shade, and provide visual enclosure for activity areas.
- c. Establish a foundation planting of shrubs and groundcover in a mulch bed (three-inch minimum depth) for each dwelling unit to compliment the architectural character of the facade. At a minimum, the front facade of all units shall be landscaped to cover a minimum of 70 percent of the front foundation. Entry areas shall be enhanced with ornamental flowering shrubs and evergreen groundcover such as Indian Hawthorn and hardy junipers. Rear and side yard foundation planting may receive less emphasis. Foundation planting beds shall be fully landscaped with plant material to fill the beds at maturity. Planting beds with mulch and no plants is not an acceptable groundcover. A minimum of one (1) shade tree and one (1) Shade or ornamental trees should be added to the yard areas of units for shade and visual interest. Minimum plant sizes for installation shall be: 1-3/4 inch caliper deciduous trees, six-foot high evergreen trees, and two-inch height for shrubs. Install plants with spacing, branching, and plant form as defined by the American Standards for Nursery Stock.
- d. Establish turf in all areas that have been disturbed by construction activities. At a minimum, establish turf by sod in front yards of all dwelling units and by hydroseeding in all open space and other areas. State Approved seed and sod shall be used to establish turf. Maintain turf establishment areas until accepted by the Contracting Officer as having an acceptable stand of turf.

#### 1.13.1.2 Landforms

The Contractor shall use landforms where feasible to soften the impact of undesirable views and to create visual interest. Use landforms such as mounds and swales in conjunction with landscape plant materials to provide a spatial articulation, or enhance drainage structures or surface water retention areas. Use landforms to add interest and diversity to the project. In particular, employ landforms around outdoor activity areas to provide a sense of enclosure and to define functional relationships.

#### 1.13.1.3 Grading

Provide for proper drainage of planting beds and plant pits to compensate for soil conditions or a high water table that may be detrimental plant growth. Grading of turf areas and planting beds shall provide slopes that are smooth and continuous. Positive drainage shall be provided in all areas.

#### 1.13.1.4 Landscape Maintenance

Provide landscape establishment and maintenance within the initial contract for installation of plant materials. Complete landscape maintenance is required by the Contractor during the construction period until the landscape is accepted by the Contracting Officer and during the one-year plant establishment period. The duration of the establishment period shall not be included as a contract option. The establishment requirements shall include watering, mowing and edging, weed control fabric, replacing mulch, inspection, control of pests and weed control, tightening staking and guying materials, pruning, fertilization, and maintaining watering saucers. Plants that do not survive the plant establishment period shall be replaced by the Contractor at no expense to the Government.

#### 1.13.1.5 Landscape Materials

Provide turf, landscaping, and maintenance materials, methods, and testing as specified. Provide topsoil composition tests as specified in DOA SSIR including a report with recommendations for amendments of pH adjustment, soil conditioners, and fertilizer. Provide minimum three-inches of topsoil over unpaved areas.

Topsoil shall meet the following composition requirements:

Containing from six to 10 percent organic matter as determined by the topsoil composition tests of the Organic Carbon, 6A, Chemical Analysis Method described in DOA SSIR. Maximum particle size, 0.75 inches, with maximum three percent retained on .25-inch screen. Other components shall be within the following percentages:

Silt 25-50
Clay 10-30
Sand 20-35
pH 5.5 to 7.0
Soluble Salts 600 ppm maximum

Provide centipede grass seed possible based on recommendations resulting from a soils analysis. The seed shall be State-certified. When establishing turf by hydroseeding method apply mixture in one application of seed, fertilizer and fiber. Turf establishment period will commence on the date that inspection by the Contracting Officer shows that the new turf furnished under this contract has been satisfactorily installed and shall continue for a minimum period of 90 days.

Provide nursery stock plants balled and burlapped or container grown in accordance with ANSI Z60.1. The planting soil mix shall be 100 percent topsoil. Weed control fabric shall be provided in all planting beds. Weed control fabric shall be roll type polypropylene mat a minimum thickness of .02 inches. Any plant that is 20 percent or more dead during the establishment period shall be replaced with a new plant meeting all the initial planting requirements.

Trees shall be staked, minimum two per tree. Provide hardwood mulch typical to the area (minimum three-inch thickness) over planting beds. Fertilize all plants for a minimum of one year duration during the plant establishment period.

#### 1.13.2 Recreation Facilities

Recreation facilities shall be provided as a part of this project including but not limited to trails, playgrounds, court areas, playing fields, and picnic areas. Active recreation facilities shall be concentrated in a central park area complete with associated improvements such as parking and area lighting as shown on the Master Plan provided with the RFP. Recreation facilities such as court areas and playing fields shall not be lighted for night use, however the pavilion shall be lighted and area lights shall be provided to ensure security of the area.

- a. Hiker-biker trails are required and shall be a six-foot wide (minimum) asphalt surface designed in a loop system independent of the street network. The trail system shall be designed to connect housing clusters to one another and to provide access to neighborhood destinations such as the elementary school and recreation facilities. The typical construction cross-section and pavement design of trails shall be based on the results of a geotechnical report for the site however, no less than a two-inch depth of asphalt shall be used for the trail surface.
- b. Two (2) playgrounds shall be provided at the neighborhood park in safe locations with visibility from the streetscape and surrounding units for security purposes. One (1) tot-lot playground (2-5 year age group) shall be provided with new equipment and a second playground shall be provided re-using existing equipment to be relocated from two locations on-site. The source for the re-used equipment is located at two existing playgrounds in Slocum Village. One is located adjacent to the existing water tower, and the other is located adjacent to the existing tennis courts.

The playgrounds shall be furnished with modular play equipment systems and site furnishings designed by a nationally recognized manufacturer (IPEMA Approved) to meet the physical, social and cognitive needs of the specified age group. Play equipment shall be installed by the manufacturer or a contractor certified for installation by the manufacturer.

The playgrounds shall be designed with equipment for users in the 2-5 year age group. Signage at the playgrounds shall be provided to identify the appropriate age groups and the proper use of the facility. The playgrounds shall be a 3500 square feet (minimum) play equipment area designed to accommodate a minimum of 50 children. The minimum play area size specified above shall be fully utilized with play structures and play equipment components to include a variety of play opportunities such as climbing, sliding, swinging, crawl tubes, play panels, and balancing in multiple combinations.

The 2-5 age group equipment shall emphasize imaginative play with lower equipment heights. The playgrounds shall be accessible to users with disabilities and meet applicable ASTM standards, Uniform Federal Accessibility Standards (UFAS), and guidelines in the Handbook for Public Playground Safety (US Consumer Products Safety Commission). ADA Playground Safety Standards shall be applied as a guideline for design to the extent possible. Playground safety surfaces shall be provided in all use zones and under play equipment. Safety surfaces shall be constructed to the proper depth using a material that meets shock absorbency criteria recommended in ASTM F 1292. At a minimum, sand shall be used as a safety surface if it is designed to meet the ASTM requirements. Mulch or other wood products shall not be used as a safety surface. In accordance with ASTM F 1487, provide a clear unobstructed use zone under and around each item of play equipment. All use zones shall be shown on the design plans for playgrounds.

Playgrounds shall be edged with concrete sidewalk or other material to retain the safety surface. A shade structure shall be provided for seating with the playgrounds. Play equipment shall include roofs and other features to create visual interest and shade. Provide trees and other planting in the vicinity of the playgrounds to provide shade and climate moderation. Since the playgrounds have been consolidated into one area of the site, they shall be designed to be comprehensive in terms of play events and large enough to serve the population of the surrounding housing neighborhood.

Play equipment products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long- term support for replacement components for the life-cycle of the equipment. At a minimum, structural members shall be made of galvanized steel or aluminum with powdercoat color finishes. Vertical structural poles shall be a minimum of five inches in diameter with exterior clamps. Decks shall be of

steel construction coated with a vinyl protective finish. Play components shall be manufactured of (UV stabilized) polyethylene with molded-in color. Recycled plastic (polyethylene) may be used for play equipment components and structural elements. Site furnishings such as benches, signage, and shade structures shall be selected to complement the materials and design of play equipment and be manufactured of durable, attractive, materials that will be low maintenance and long-lasting.

- c. Provide two (2) full size basketball courts for this project in the central park area complete with all appurtenances and a 10-foot vinyl coated chain link fence enclosure. One (1) court shall be designed for regulation play and one (1) shall be designed for children with a minimum of four goals set at different heights for users of different ages and half basketball play. Courts shall be concrete paving with surface finished for play with appropriate striping, goals, and all associated equipment. All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the equipment.
- d. Provide one (1) sand volleyball court for this project in the central park area complete with all associated equipment. Sand play surface shall be edged to contain the surface material and the facility shall be designed for regulation play. All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the equipment.
- e. Provide one (1) full size soccer field for this project in the central park area complete with removable goals and all other associated equipment. The field area shall be generally level for playing however, a two (2) percent cross-slope shall be provided for adequate drainage. All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the equipment.
- f. Provide one (1) group picnic pavilion to serve 15 percent of the project population in the central park area. Minimum size of the pavilion shall be 30 feet by 60 feet. The picnic pavilion shall be a pre-engineered structure with a standing seam metal roof, steel structure, and a finished concrete floor. At a minimum, three (3) group-size barbecue grills, trash receptacles, lighting, water fountain, and a hose bib shall be provided in conjunction with the pavilion. All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the pavilion.
- g. Provide a minimum of six (6) individual picnic shelters with tables, roof covering, and grill in the central park area. Picnic

shelters shall be grouped in a one or two locations convenient to potable water and trash receptacles. The picnic shelters shall be pre-engineered structures with a metal roof, steel structure, and a finished concrete floor to match the design of the picnic pavilion. All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the equipment.

#### 1.13.3 Site Furnishings

Site furnishings such as benches, fencing, trash receptacles, mail facilities, grills, and signage shall be designed to compliment the architecture and other facilities in the vicinity.

Gang mailboxes shall be provided with a shade/rain structure complete with roof and finish materials to match the adjacent architectural character. The location and arrangement of gang mailboxes shall be coordinated with the U.S. Postal Service.

All equipment and products shall be manufactured of durable, colorful, safe, and low maintenance materials by a manufacturer that can provide long term support for replacement components for the life-cycle of the site furnishings. Recycled plastic products may be used in site furnishing products as a value-added item. Colors, materials, products and design shall be approved by the Contracting Officer prior to installation.

#### 1.14 ARCHITECTURAL DESIGN

#### 1.14.1 Architectural Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the design work and construction work shall conform to the applicable requirements of the following:

- a. FED-STD 795
- b. PL 101-336
- c. AIA AGS
- d. AISI SG-673
- e. ICBO UBC

#### 1.14.2 Facilities Description

The Slocum Village Family Housing Phase I project shall be designed and constructed using the current MIL-HDBK-1037/8 and NAVFAC P-80.

The new dwelling units shall be two-story townhouses, wood-framed buildings on concrete slabs with brick veneer and vinyl siding. The brick veneer shall be a minimum of 42 inches wainscot from the finished grade on all sides. As a high priority, metal framing shall be considered as an added

value. Another added value of equal priority is additional brick veneer finishes, at the designer's discretion, on exterior walls. The roof coverage shall be shingles. These units shall be two, three and four bedroom unit types. The Contractor shall construct 62 percent two-bedroom units, 31 percent three-bedroom units and seven (7) percent four-bedroom units. Five percent (5%) of the total dwelling units shall be handicapped accessible. These units shall be a mix of bedroom types and may be one-story attached, semi-attached or detached dwelling units.

The exterior materials for all new dwelling units shall be designed to conform at a minimum to the standards set forth in the Navy Neighborhood of Excellence which emphasizes in quality housing and neighborhood. The Navy Neighborhood of Excellence emphasizes in the standard of appropriate architecture that must successfully blend four elements: aesthetically pleasing design, functionality, and compatibility with the environment and reasonable economy in construction and maintainability.

The Family housing project shall provide variety and interest in building exteriors, massing, building setbacks, rooflines, materials, textures, fenestration details and color schemes. The Contractor shall provide color samples for Government approval. All project components shall be visually integrated and compatible. The Contractor shall use variety in the exterior architectural design elements consistently throughout the neighborhood. Special design features may include columns, shutters, vent shapes, differing window styles and configurations, and trim (size and color), vinyl siding (size and color), brick, etc.

The Slocum Village Family Housing Phase I building program is indicated in Section 01155, "Facility Program Requirements". The housing architectural style, unit types, net area per unit type, interior clear heights and other requirements contained therein are minimum design requirements and shall not be reduced.

Material selections for the dwelling unit design shall be of good quality, sustainable design, and maintenance free where possible and energy-efficient and shall be compatible with the standards of the private sector home.

#### 1.14.3 Gross Building Area

Gross building area is measured to the outside face of exterior enclosure walls. Do not include normal roof overhangs in gross building area. Exterior covered areas such as balconies count as half scope, and are measured from the face of the enclosure wall to the edge of the covered serve. Refer to NAVFAC P-80, Facility Planning Factor Criteria for Navy and Marine Corps Shore Installations and MIL-HDBK-1035 for more information on area calculation.

The two-bedroom dwelling units should have a maximum size of 950 square feet net area. The three-bedroom dwelling units should have a maximum size of 1200 square feet net area. The four-bedroom dwelling units should have a maximum size of 1350 square feet net area. Handicapped dwelling units net floor area may be increased by a maximum of ten (10) percent.

Gross and net area calculations shall be provided on each proposed design submittals for each unit type design.

#### 1.14.4 Functional Area and Space Criteria

#### 1.14.4.1 Functional Areas

The functional areas shall be as indicated in Section 01155, "Facility Program Requirements".

#### 1.14.5 Building Design

#### 1.14.5.1 Architectural Character and Scale

The Contractor shall develop the Slocum Village Family Housing Project floor plans, elevations, and sections. Required architectural character and scale shall be provided in accordance with the RFP requirements.

- 1) Floor Plans: Floor plans for each unit type shall be developed and designed in accordance with the spatial relationship, function, and square foot area specified in Section 01155, "Facility Program Requirements."
- 2) Exterior Building Appearance and Colors: All exterior materials, roof lines, volumes, fenestration and colors shall be as indicated in this section and as indicated in Section 01155, "Facility Program Requirements". These requirements shall be indicated in the elevations and drawing sections.
- 3) Type of Units and Size: The housing units shall consist of two, three and four bedroom type in both one-story and two-story townhouse style. A mix of four, five and six unit building is required. No more than six dwelling units per building will be allowed. The buildings shall not exceed two (2) stories in height. All dwellings units should have an attached one-car garage.

#### 1.14.5.2 Accessibility

A five percent (5%) of the different type of dwelling units shall be handicapped accessible with kitchen and bathrooms adaptable and shall conform to the Uniform Federal Accessibility Standards (UFAS) and ADA Accessibility Guidelines for Buildings and Facilities (ADAAG). The accessible units shall be evenly distributed throughout the neighborhood. The handicapped units shall be one-story attached, semi-attached or detached units. The requirements for the accessible units are indicated in Section 01155, "Facility Program Requirements".

#### 1.14.5.3 Structure

Select an economical structural system based on facility size, projected load requirements, and subsoil conditions.

#### 1.14.6 Exterior Walls

The exterior wall system for the dwelling unit shall be two-inch by six-inch wood stud framing at 16-inches on center with a minimum 42-inch brick veneer wainscot on all façade sides and vinyl siding wall construction. Provide R-19 wall insulation. Provide through-wall flashing at the head and sill of all wall openings, top and bottom of walls and weep hole locations. Provide a metal framed building as a high priority added value. As another high priority added value, provide additional brick veneer finish on all exterior walls.

Provide and install vinyl siding and accessories in accordance with manufacturer's installation instructions and recommendations. Vinyl siding shall at a minimum conform to ASTM D 3679 and VSI (Vinyl Siding Institute), Rigid Poly Vinyl Chloride (PVC) Siding, minimum 0.044 inch thick, maximum five-inch exposure. Vinyl siding shall have a wood textured grain. Vinyl siding shall be installed either over a minimum one-inch expanded polystyrene foam insulation or, over 5/8-inch sheathing to provide a watertight, smooth, flat surface. This substrate shall be fastened securely to the wall framing. Provide 15 lb. building felt over the substrate. Use either nails or staples for fastening methods, complying with the siding manufacturer's instructions. Vinyl siding shall have a wind-load resistance of 130 lbs/square feet. Color and style shall be as approved by the Contracting Officer. Provide a vinyl siding system with all the required accessories, as recommended by the manufacturer. Provide vinyl mounting blocks for all exterior wall mounted items on vinyl siding surfaces.

Provide and install face brick and accessories, including units for lintels, arches, corners, flashing, and others. Average dimension of brick shall be 3 5/8-inches thick, 2 1/4-inches high, and 7 5/8-inches long (modular). Color shall be as approved by the Contracting Officer.

Locate vapor barriers to allow venting of wall assemblies and avoid trapping moisture within wall assemblies. Carefully review the use of materials such as vinyl wall covering and foil faced gypsum board that may act as vapor barriers.

The use of Exterior Insulation and Finish System (EIFS) and aluminum siding is not permitted.

#### 1.14.7 Interior Walls

Interior walls shall be four-inch minimum wood studs spaced at 16 inches on center with one layer of 1/2-inch gypsum wallboard on each side, unless indicated otherwise in Section 01155, "Facility Program Requirements". Provide water-resistant gypsum board in wet areas. Walls having wall tile applications shall have a cementitious backboard substrate. Consider ease of repair, maintenance, and refinishing when choosing wall finishes.

Choose wall and partition assemblies to provide acoustical sound separation between spaces as specified in Paragraph entitled "Building Acoustics" of this section. Stagger electrical switches, outlet boxes, and place HVAC openings, etc., to maintain the sound separation of the wall assembly. Provide sealant at the edges of all assemblies to adjacent construction in

order to avoid flanking sound paths.

Where required by code, provide partitions and walls of UL listed designs to provide required minimum fire rating. Wherever gypsum board is aligned perpendicular to a window jamb or is uplighted or downlighted, use featured edge gypsum board with two coat joint compound to level joints.

#### 1.14.8 Concrete Masonry

All exposed CMU shall be provided for foundation walls.

#### 1.14.9 Interior Ceilings

All interior ceilings shall be 1/2-inch gypsum board painted unless indicated otherwise in Section 01155, "Facility Program Requirements". Wherever gypsum board is aligned perpendicular to a window jamb or is uplighted or downlighted, use featured edge gypsum board with two coat joint compound to level joints.

#### 1.14.10 Painting

Exterior surfaces requiring painting shall be minimized. All exterior and interior surfaces shall receive a minimum of one prime coat and two finish coats of paint. Wood, trim, frames, etc., shall be back and end primed. Exterior semi-transparent stains, three coats, are acceptable, where appropriate for wood, plywood, etc. For interior gypsum board walls, ceilings, and wood items, such as doors, wood baseboard, window frames, door frames and window stools and or aprons provide a semi-gloss finish. All walls shall be provided with an "orange peel" texture, which is a rough texture.

Colors shall be submitted by the Contractor, and approved by the Contracting Officer. Refer to Section 01155, "Facility Program Requirements" and table below for paint finish schedule and types of coating systems.

All paints and stain, including color pigments, shall be approved for residential use and shall be 'lead-free'.

Paint specifications shall meet or exceed the latest issue of the applicable codes and shall comply with the specifications of the Master Painters Institute (MPI), listed in Unified Facilities Guide Specifications (UFGS), Section 09900, "Painting".

#### 1.14.11 Coating Systems

Provide and apply coatings that conform to the specifications listed in Table 1.

#### Table 1: Coating Systems

Surface	Primer	Intermediate	Topcoat	
Exterior Metal	MPI 10 flat	N/A	MPI 119 (gloss)	

Table 1: Coating Systems

Surface surfaces	Primer	Intermediate	Topcoat
Interior Metal surfaces	MPI 79	MPI 141 (semi-gloss)	MPI 141 (semi-gloss)
Gypsum Wall Board (all areas except wet areas)	MPI 50	MPI 139 (eggshell) MPI 141 (semi-gloss)	MPI 139 (eggshell) MPI 141 (semi-gloss)
Gypsum Wall Board (wet areas)	MPI 50	MPI 110-62	MPI 110-62
Interior Wood and Plywood Surfaces (except in bath- rooms or other wet areas)	MPI 45	MPI 47 (semi-gloss)	MPI 47 (semi-gloss)
Interior Wood and Plywood Surfaces (bathrooms areas and other wet areas	MPI 50	MPI 141 (semi-gloss)	MPI 141 (semi-gloss)

#### 1.14.12 Building Insulation

Building insulation in roof, walls, and ceiling is required. R-values shall be determined based on energy requirements specified in the paragraph of this specification entitled "Mechanical Design" and in the paragraph entitled "Mechanical Design Calculations", in Section 01160, "Design Documents". Provide in all exterior walls a minimum value of R-19 batt insulation and a minimum value of R-30 in the attic.

#### 1.14.13 Interior Design

#### a. Wall Finishes:

- (1) Paint Interior surfaces and surfaces requiring ceramic tile, shall be painted a minimum of one prime coat and two finish coats. Walls and ceilings shall be painted as indicated in Section 01155, "Facility Program Requirements" and in Table 1, "Coating Systems" in this section.
- (2) Ceramic Tile Provide glazed, matte finish, 5/16-inch nominal thickness, ceramic tile wall finishes as indicated in Section 01155, "Facility Program Requirements". Provide full height ceramic wall tile in tub areas. Ceramic wall tile color shall be approved by the Contracting Officer. Provide all necessary accessories.

(3) Select neutral colors as approved by Contracting Officer for more permanent surfaces (i.e.; ceramic tiles, laminates, etc.) to facilitate future finish material changes and maintenance. Provide finishes as indicated in Section 01155, "Facility Program Requirements".

#### b. Hard Surface Floor Finishes:

- (1) Provide laminate wood flooring for specified areas as indicated in Section 01155, "Facility Program Requirements".
- (2) Provide vinyl composition tile or sheet vinyl for specified areas as indicated in Section 01155, "Facility Program Requirements". Sheet vinyl flooring shall have a nominal gauge of not less than .066-inch wear thickness. Vinyl composition tile shall be 12 inches by 12 inches, 1/8-inch thick. Color and patterns shall be as approved by the Contracting Officer.
- (3) Provide slip-resistant, 1/2-inch nominal thickness ceramic floor tiles for specified areas as indicated in Section 01155, "Facility Program Requirements". Color and patterns shall be as approved by the Contracting Officer.
- (4) Liquid Sealer Provide two coats of sealed non-skid concrete floor finish for specified areas as indicated in Section 01155, "Facility Program Requirements". Product shall chemically densify, harden, seal, and waterproof concrete floor surfaces. Product shall also facilitate a floor surface that is easy and inexpensive to maintain. Product shall be USDA authorized VOC compliant colorless solution of 100 percent active siliconate chemicals.

#### 1.14.14 Interior Specialties

#### 1.14.14.1 Cabinets, Millwork, and Countertops

Provide solid wood factory-finished kitchen and bathroom wall and base cabinets. Cabinets shall conform to Kitchen Cabinet Manufacturers
Association (KCMA) standards for custom grade, Type 1, Style B construction (multiple self supporting units fastened together to form a larger unit, face frame construction. Kitchen wall and base cabinets shall have a minimum length of 10 feet (combined lengths) each.

Countertops for kitchen base cabinets shall be constructed of ceramic tile with four-inch ceramic tile back-splash. Provide trim at edges for a complete and finished installation. Countertop tiles shall be the same thickness as specified for wall tiles. The countertops for the bathroom base cabinets shall be constructed of plywood with high-pressure decorative laminate, with rounded edge or other seamless edge treatment at the face and at the cove of the back-splash. Back splash shall be integral. The countertop laminate construction shall conform to NEMA LD 3. Bathroom vanities shall have a minimum length of two feet.

Hardwood or hardwood plywood shall be the frame materials. Hardwood

plywood shall be Type II (Interior), three or five-ply, with face veneer of good grade (1) or better. All exposed edges shall be finished with hardwood strips or high-pressure decorative laminate (HPDL). The use of particleboard and glued joint is not permitted.

Doors shall be solid hardwood stiles and rails, not less than 3/4-inch thick with raised hardwood panels. Drawer fronts shall be solid hardwood not less than 5/8-inch thick to match doors. Drawer sides and backs shall be solid clear wood or plywood, not less than 1/2-inch thick. Drawer fronts should be screwed not glued.

Provide necessary hardware, including two hinges for each door and side-mounted guides with steel ball bearing with nylon rollers for each drawer. Provide recessed integral pulls at sides of doors and bottom of drawers. Door hinges shall be self-closing type. Center-mounted guides are not acceptable. All cabinets shall be designed to avoid dead space and provide full utilization of storage space.

#### 1.14.14.2 Kitchen Appliances

Appliances shall comply with the U. S. Department of Energy's "Energy Star" program recommendations. The Contractor shall provide and install all kitchen appliances and make necessary electrical connections. For each dwelling unit, provide UL listed appliances as follows:

Refrigerator: The refrigerator shall be provided and installed by the Contractor. The refrigerator shall be at least 18.2 CF top-mount and frost free.

Range/Oven (30 inches wide): Electric free stand-in range/oven shall be provided and installed by the Contractor. The electric range shall be self-cleaning.

Range/Ventilation Hood: A range/ventilation hood with exhaust fan shall be provided by and installed by the Contractor.

Garbage Disposal: Garbage disposal shall be provided and installed by the Contractor. For further specifications refer to the plumbing paragraph in this section.

Dishwasher: A built-in dishwasher shall be provided and installed by the Contractor. Water saver features are required. High efficiency models with energy saving settings, delay-start automatic timer, dispenser for rinse agent, and "quiet" features are required.

#### 1.14.14.3 Bathroom Accessories

Bathroom accessories shall be surface and recessed mounted and constructed of stainless steel and ceramic. Provide as indicated in Section 01155, "Facility Program Requirements".

#### 1.14.14.4 Bathroom Fixtures

For plumbing fixtures refer to paragraph "Plumbing Design" in this section.

#### 1.14.14.5 Window Blinds

Provide blinds fabricated from two-inch horizontal 0.017-inch thick, semi-opaque, light filtering, lead-free vinyl slats with cords, tilting devices, and lifting cord locks. Provide blinds at all window openings.

#### 1.14.14.6 Vinyl Coated, Steel Rod, Ventilated Shelving System

Provide heavy-duty vinyl coated wire shelving of basic cold drawn steel wire. PVC coating shall be nine to 11 mils. minimum. Depth of shelves shall be as indicated in Section 01155, "Facility Program Requirements". Provide shelf support brackets and associated hardware at 24-inches on center maximum. Shelf units shall be capable of supporting a minimum of 50 lbs. per linear foot. Color of shelving and associated hardware shall be white. Metal rod for closet clothes hangar shall be at least 1-1/2 inches minimum diameter thickness.

#### 1.14.14.7 Dwelling Unit Address Number

Provide dwelling unit address number illuminated near the dwelling unit entrance. The Contracting Officer shall approve type and style of dwelling unit address number.

#### 1.14.14.8 Gable Louvers

Provide vinyl gable louvers on exterior walls and install as per manufacturer's recommendations. The Contractor shall provide calculations for required air circulation in the attic space.

#### 1.14.15 Interior Stairs

Provide a wood interior stair. Wooden stair framing shall be nailed, screwed, bolted and glued together to form a strong rigid structure without squeaks or vibrations. Stairs shall be provided with sound attenuation. Balusters shall be installed into treads and landings with glue. Railings shall be installed with straight runs following slope of stairs and reinforced with metal brackets. Stair design shall be open, with no walls or enclosed spaces under the stairwell. Stairs shall present finished surfaces at all exposed visible areas.

Stair risers shall be a maximum of eight inches in height. Stair treads shall be 10-1/2 inches minimum width. All risers shall be identical in height. Handrails shall be designed to support a minimum load of 250 pounds applied at any point in any direction. Handrail mounting height shall be between 30 and 34 inches from top of nosing to centerline of handrail. The clearance between the rail and the wall shall be 1-1/2 inches. The clearance between the rail and the wall shall be 1-1/2 inches. Projecting ends of handrails shall be returned smoothly to wall, floor, or post, as required by code. The minimum height from the stair tread to the underside of a protruding horizontal surface shall be a minimum of six-feet eight-inches.

#### 1.14.16 Roofing System

#### 1.14.16.1 Asphalt Shingle

- (1) Provide mineral granule-surfaced asphalt shingles self-sealing, square tab, strip, and fungus-resistant. Architectural shingles shall weigh not less than 290 lbs. per 100 square feet. The roof slope shall have a four in 12 pitch and/or maximum 10 in 12 pitch.
- (2) The asphalt shingles shall be installed over 5/8-inches plywood and/or board sheathing attached to wood truss and/or wood joists and/or wood rafters. Trusses and/or joists shall be designed to meet all span and load requirements.
- (3) Shingles shall meet the fire resistance requirements of UL 790 for Class A and the wind resistance requirements of UL 997.
- (4) The roof insulation shall be a minimum of R-30 batt insulation. Injected polyurethane and blow-in insulation is not allowed.
- (5) Firestopping material shall be installed around pipe penetrations and in other roof penetrations to prevent spread of fire and smoke.
- (6) The color of the asphalt shingles shall be as selected by the Contracting Officer.
- (7) Furnish the asphalt shingles with a manufacturer's standard 25 year warranty.

#### 1.14.16.2 Roofing Accessories

- (1) All miscellaneous accessories, ridge vents, fascias, trims, flashings, and soffits shall have a prefinished factory applied and baked 70 percent fluoropolymer custom color paint finish.
- (2) Soffit panels and fascias can be either vinyl and/or aluminum finish. Soffits shall have a continuous integral locking system and shall be perforated to provide 5.85 square inches of free area per linear foot for adequate attic building ventilation. Deflectors and rain diverters shall be provided at all entrances. The Contracting Officer shall approve the color of the roof accessories.
- (3) Provide a metal drip edge (24 ga. galvanized) designed to allow water run-off to drip free of underlying construction, at eaves and rakes prior to the application of roofing shingles. Apply directly on the wood deck at the eaves and over the underlay along the rakes. Provide flashing as required.
- (4) Roof overhangs shall be at least 2'-6" wide. Overhangs shall be provided with vinyl or aluminum perforated soffit panels, as described in item (2) above.

#### 1.14.17 Vapor Barriers

Calculate vapor permeability and temperature through the entire wall sections including interior finishes to ensure dew point does not occur within the wall system. Special construction considerations not limited to heating heating, ventilating and air conditioning (HVAC) systems are required in humid areas.

#### 1.14.18 Doors, Frames, and Hardware

- (1) Exterior Doors: All exterior doors shall be fully weather-stripped and include a heavy-duty metal threshold to prevent drafts, dirt, water, and insect entry. Contractor shall provide catalog cuts for Government approval. Exterior doors shall be 1-3/4 inch thick. All exterior doors shall be hollow metal insulated. Doors shall be fabricated from two sheets of steel (ASTM A 366) or A60 galvanized steel. No visible seams shall occur on door faces or edges. Top and bottom of doors shall be 16 gauge. Interior core shall be solid polyurethane core with an R-15 value for energy efficiency. For entry door, provide a raised hollow metal panel insulated, with a viewer mounted at eye level, and glass décor. Provide dead bolt lock for all entry doors, key operated from outside, thumb turn on inside. One key shall fit all entry doors. For painting refer to paragraph entitled, "Coating System" in this section.
- (2) Sectional residential garage overhead door: Provide a hollow metal sectional overhead door manually operated which operate in a system of tracks to completely close the door opening in the closed position. Doors shall be manually operated with lifting handles on both sides of doors. The force required to operate the door shall not exceed 25 pounds. Form door sections shall be of hot-dipped galvanized steel not lighter than 20 gauge with longitudinal integral reinforcing ribs. Provide dead bolt lock for all entry doors, key operated from outside. For painting refer to paragraph entitled, "Coating System" in this section.
- (3) Patio atrium door: Provide vinyl clad wood atrium door with full glass insert. Glass shall be tempered, with double insulated glazing. Provide dead bolt lock for all entry doors, key operated from outside, thumb turn on inside. One key shall fit all entry doors. For painting refer to paragraph entitled, "Coating System" in this section.
- (4) Interior Doors: Provide hollow core wood flush with a paint finish. Interior doors shall be a minimum of 1-3/8 inch thick. Refer to paragraph entitled, "Coating System" in this section for painting.
- (5) Closet Doors: Provide wood doors sliders and/or hinged style doors, with a paint finish. For sliding closet doors provide with bottom and upper track; and for hinged closet doors provide with magnetic catch. Refer to paragraph entitled, "Coating System" in

this section for painting.

(6) Door frames: Exterior frames shall be metal. Interior doors' frames shall be wood. Refer to paragraph entitled, "Coating System" in this section for painting.

#### 1.14.18.1 Hardware

Provide hardware in compliance with the Builders Hardware Manufacturers Association (BHMA). All the hardware in all dwelling units shall match throughout. Lock cylinders shall have six pin tumblers and interchangeable cores which are removable by a control key. The Contractor shall provide one extra set of cores for each 50 housing units and furnish four keys for each change and for master key system. Provide a master keying system. Keying information shall be obtained through the Contracting Officer. Key system shall be equal, better or similar to Weiser, Falcon, Sargent, or Schlage. All exterior doors shall be provided with 1-1/2 pair of 4-1/2 inch by 4-1/2 inch hinges, lockset, deadbolt, door stop, threshold and weather-stripping. For the main front entry door provide a door viewer. Bedroom, bathroom and interior storage doors shall be provided with one pair of 3-1/2 inch by 3-1/2 inch hinges, lockset, and doorstop. Closet and laundry doors (swing type) shall be provided with one pair of 3-1/2 inch biges, latchset and doorstop.

Hardware for handicap units shall be lever type. Handicapped adaptable units shall comply with FED-STD 795.

Locks and keys shall conform to the standards and requirements of Builders Hardware Manufacturers Association (BHMA) listed in the table below.

Butts and Hinges, ANSI/BHMA A156.1: Full mortise hinges. 4-1/2 inches x 4-1/2 inches, 1-1/2 inches pair exterior doors; and 3-1/2 inches x 3-1/2 inches, one pair for interior doors.

Mortise Locks and Latches, ANSI/BHMA A156.2: Series 4000, Grade 2 at exterior doors, F81 or F82 function operations; for interior doors, Grade 2 or 3, F75 or F76 function operations. Provide trim of wrought brass, aluminum, or stainless steel.

Auxiliary Locks, ANSI/BHMA A156.5: Bored Auxiliary Dead Latches, Series E011 or E0112 or E0113, and Mortise dead locks, Series E06072 or E0223 for narrow stiles. Provide matching trim of wrought brass, aluminum, or stainless steel.

Interconnected Lock and Latches, ANSI/BHMA A156.12: Series 5000, Grade 2, F95, F96, or F97 function operations. Provide matching trim of wrought brass, aluminum, or stainless steel.

Closers, ANSI/BHMA A156.4: Series C02223, Grade 2. Surface closers, modern type with cover.

Auxiliary Hardware, ANSI/BHMA A156.16: For door viewers, door stops, and door knockers, Grade 2.

#### 1.14.19 Windows

The residential windows shall have the ENERGY STAR label to meet efficiency recommendations. Size the operable sections of windows to comply with NFPA 101 standards for egress. Windows may have different style and sizes.

- a. Specify residential grade operable windows with heavy-duty insect screen for operating section. Provide windows with insulated, low "E" glass and thermal break frames.
- b. Windows shall be double hung with vinyl clad frames with welded corners. The windows shall have SHGC (Solar Heat Gain Coefficient) of 0.55 and a U-factor of 0.40. All windows shall be double glazed insulated glass, with minimum 1/2-inch (nominal) space between panes. Glazing shall be factory sealed. Windows shall have operable sections that tilt out to facilitate cleaning from the inside of the dwelling unit. Provide windows with factory applied weather-stripping. Windows shall be provided with screen at all operable sashes. Window (PVC) color shall be white. Color shall be integral or co-extruded to the PVC to prevent heat build-up.
- c. Provide wood trim around windows. Wood window stools and aprons shall be painted wood. Refer to paragraph and table entitled, "Coating System" in this section for painting.

#### 1.14.20 Building Acoustics

If the wall sound design chosen by the Contractor requires a material in excess of the RFP requirements, provide the upgraded material. For example, if the wall design chosen uses 5/8" gypsum board, specify it as an added value over the RFP requirements. Provide acoustic design which utilizes the STC values and methods indicated in the AIA AGS and as indicated in the MIL-HDBK-1035. Designers shall address isolation of noise from a variety of sources and indicate all sound ratings for the following locations on the drawings:

- a. Adjacent to dwelling units.
- b. Spaces on floor levels and stairs.
- c. Mechanical rooms and garages.
- d. Laundry rooms/closets.
- e. Exterior generated sound such as aircraft and automobile noise.
- f. Floor, ceiling and stair assemblies shall be at least STC 55 and have an impact isolation class of at least IIC 60. Telephone, cable television, convenience outlets, and mechanical ducts shall not compromise the acoustical integrity of wall, floor, or ceiling assemblies. Select fluorescent lamp ballasts to minimize noise generation. Party walls separating housing units shall be at least STC 55. Habitable areas over garage, wet areas (kitchen, bath, utility,

laundry), and habitable areas (living, dining, bedroom, halls) shall be at least STC 52.

#### 1.15 STRUCTURAL DESIGN

#### 1.15.1 Structural Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the structural design work and following construction work shall conform to the applicable requirements of the following manuals, codes, and standards:

- a. ICC IRC
- b. ASCE 7
- c. ACI 530.1
- d. ACI 318

Recommended best design practices for high wind areas based on SBCCI SSTD 10 should include:

- a. When a gable endwall extends from the uppermost floor to the underside of the roof and is not supported by a ceiling diaphragm roof bracing shall be provided perpendicular to the rafters of trusses in the first two rafter or truss spaces at each end and shall be spaced at four feet maximum on center. Bracing members shall be full depth of rafters or trusses in the first two rafter or truss spaces at each end and shall be spaced at four feet maximum on center. Bracing members shall be full depth of rafters or truss top chords.
- b. Provide positive load connections at the roof to wall, and the foundation to wall connections to resist uplift due to wind loading.

#### 1.15.2 Foundation

Permanent foundation and/or slabs-on-grade, with concrete footings, and masonry or concrete foundation walls, are required. Turndown slabs may be used for exterior storage sheds or porches and will not require concrete foundation walls and footings. Foundation and floor slabs shall be designed in accordance with ICC IRC (ICBO UBC may only be used if the wind loading criteria is based on ASCE 7) and ACI 318 to satisfy the requirements specified in the paragraph entitled "Geotechnical Design" in this section of this specification. Provide a connection between the foundation wall and footing. Underground utility pipes can be designed to pass through the foundation system as designed by the Structural engineer. Place slabs-on-grade on a six mil vapor barrier over four inches of porous fill. Outdoor slabs shall be provided per geotechnical engineer's recommendations. Provide control joints in slabs to prevent random cracking.

#### 1.15.3 Design Load Criteria - Fitness Center

Design live load shall be a minimum of:

- a. Floor live loads: 40 psf
- b. Passenger vehicle garages: 50 psf
- c. Attics without storage: 10 psf
- d. Roof live load: 20 psf
- e. Wind loading: Based on ASCE 7 requirements, 140 mph three-second gust wind speed, Exposure C.
- f. Earthquake loading: Based on ASCE 7 requirements, site class D, maximum considered spectral response acceleration for short periods, Ss=0.18 and the maximum considered spectral response acceleration for 1 s period, Sl=0.1.
- 1.15.4 Building Type Two-Story Dwelling Units, Townhouse Style

#### 1.15.4.1 Structural System Requirement

The structure shall be economical, durable, and sustainable. All construction shall be designed and detailed to resist the lateral loads associated with the appropriate seismic and wind load criteria found in the current ASCE 7.

The design shall incorporate universally accepted construction procedures developed through sound and prudent engineering judgment. The specified design codes shall be compared to local building codes and the more conservative requirements shall be used. Wood framing shall be in accordance with the American Institute of Timber Construction, "Timber Construction Manual".

Concrete masonry unit construction shall be in accordance with the latest edition of ACI 530.1 Manual of Masonry Construction, and Seismic Construction details shall be in accordance with the current ASCE 7. The minimum reinforcement percentage shall be provided at all portions of the CMU walls, within the limits of the maximum bar spacing.

#### 1.15.4.2 Walls

All walls shall be anchored at their top and bottom to resist minimum lateral loads as specified in the criteria and codes listed.

a. Load Bearing Walls and Shear Walls

Concrete Masonry Units (CMU), or wood stud, construction may be used for load bearing and shear walls.

b. Exterior Walls

Exterior walls with brick veneer shall be sized for a maximum deflection of L/600 under maximum design lateral loads specified.

#### c. Partition Walls

Partition walls shall be adequately braced for lateral loading.

#### 1.15.4.3 Floors

#### a. Wood Floor Sheathing

Wood Floor Sheathing, minimum of 5/8-inch thickness, shall be selected in accordance with the current ICC IRC. All floor sheathing shall be glued and screwed to the supporting structure.

Cast-in-place concrete floors shall be a minimum of 5 inch thick.

#### 1.15.4.4 Roof

#### a. Prefabricated Wood Roof Trusses

A licensed professional engineer experienced in structural design shall design open web wood trusses in accordance with the North Carolina Codes and any other applicable codes. Trusses shall be designed to meet all span and load requirements. A complete design analysis which establishes conformance to applicable codes and the suitability of the trusses for the support of the building against snow, wind and earthquake loads, shall be submitted along with shop fabrication drawings.

#### b. Wood Roof Sheathing

Wood roof sheathing, minimum of 5/8-inch thickness, shall be selected in accordance with the current ICC IRC.

#### 1.15.5 Control Joints

#### 1.15.5.1 Masonry Crack Control Joints

Spacing and location of control joints shall be determined by a structural engineer. Control joints shall be placed and spaced to divide walls or wythes into a series of rectangular panels. Control joints shall be placed in areas of high stress concentrations. Normal spacing and desired locations are noted below:

#### a. Required Control Joint Spacing:

- (1) Joint Reinforcement spaced at 16 inches on center: maximum ratio of panel length to wall height, (L/H) shall be 3 and spacing of joints shall not exceed 24 feet.
- (2) Joint reinforcement spaced at eight inches on center: maximum ratio of panel length to wall height (L/H) shall not exceed 4 and spacing of control joints shall not exceed 30 feet.

(3) The above spacing as defined in (a) and (b) shall be reduced 50% near masonry bonded corner or other similar conditions where one end of masonry panel is restricted.

Note: (L/H) is defined as follows: "L" is the horizontal distance between control joints and "H" is the vertical distance between control joints.

- b. Required Control Joint Locations:
  - (1) At regular intervals as noted above;
  - (2) At changes in wall height or thickness (This does not include pilasters);
  - (3) Near wall intersections in "L", "T", and "U" shaped buildings at approximately 50% of the spacing required above.
  - (4) At other points of stress determined by the structural engineer.
- c. A keyway or interlock will be provided across control joints to transfer lateral shear loads perpendicular to the plane of the wall. Transfer of bending moments or diagonal tension across control joint keyways or interlocks shall not be assumed. Control joints shall be weather tight.
- d. Control joints shall be continuous and vertical. Control joint details shall provide an uninterrupted weak plane for the full height of the wall, including intermediate bond beams and masonry foundation walls. However, reinforcing steel in structural bond beams shall be continuous through the control joints. Control joints need not extend into the reinforced concrete foundation walls.
- e. Locations and details of control joints, bond beams, brick expansion joints and structural expansion joints shall be indicated on the contract construction drawings in both plan and elevation views.

#### 1.16 FIRE PROTECTION DESIGN

#### 1.16.1 Fire Protection Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the fire protection design work and the following construction work shall conform to the applicable requirements of the following manuals, codes, and standards:

- a. MIL-HDBK-1008C
- b. NFPA 10
- c. NFPA 13
- d. NFPA 13R
- e. NFPA 24

- f. NFPA 70
- q. NFPA 72
- h. NFPA 90A
- i. NFPA 101
- j. ICBO UBC
- k. NFPA 720

#### 1.16.2 Fire Protection Requirements

Townhouse: the building type of construction shall be Type V in accordance with ICBO UBC requirements.

All exit requirements shall be designed in accordance with NFPA 101. Exit requirements shall be based on the occupant load as calculated according to NFPA 101.

#### 1.16.3 Sprinkler Systems

Housing: Provide a complete automatic fire sprinkler system. System shall be installed in accordance with the requirements of NFPA 13R. Provide concealed type sprinkler heads.

#### 1.16.4 Hood Suppression System

Provide a fully automatic, wet chemical kitchen hood protection system in the range hood. The system shall automatically interrupt the range power upon activation.

#### 1.16.5 Fire Alarm

Provide smoke detectors as required by NFPA 101 and install in accordance with NFPA 72.

#### 1.17 PLUMBING DESIGN

#### 1.17.1 Plumbing Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the plumbing design and construction work shall conform to the applicable requirements of the following:

#### a. NAPHCC NSPC

#### 1.17.2 System Description

Domestic hot and cold water systems shall be provided. Water piping below ground shall be Type K, copper, and above ground shall be Type M, copper, and insulated. Hot water system shall utilize an electric water heater

with storage at 140° F. The system shall be sized in accordance with ASHRAE handbooks. Provide screw-in type elements of the same wattage for all tank sizes. The water heater shall be "Energy Star" compliant. Locate the water heater in the garage. Shower valves shall be pressure-balancing type. Freeze-proof wall hydrants shall be provided on the front and rear of each unit. Provide a backflow preventer at the water service entrance of each unit. A sanitary cleanout shall be provided at the front and rear of each unit.

#### 1.17.3 Plumbing Fixtures

All fixtures, fittings, and trim shall be new. With the exception of kitchen sinks, all fixtures within a unit shall have the same finished appearance. Finishes, styles, and types shall be consistent throughout the unit and throughout the project.

Provide all new plumbing fixtures, trim and accessories. All fixtures shall be of the water conserving type with all fixtures of similar type from the same manufacturer.

Water closets shall be flush tank type using the latest water saving technologies. Water closets shall be vitreous china. Toilet dimensions and performance shall meet or exceed ASME All2.19.2M and ASMEI All2.19.6.1M.

Provide porcelain cast-iron bathtubs.

Kitchen sinks shall be double bowl stainless steel. Single lever faucet with a sprayer is required. Provide a ½ horsepower garbage disposal at the kitchen sink.

One lavatory is required in bathrooms. Lavatory shall be vitreous china, countertop shall be plastic laminate.

Electrical and water (hot and cold) connections and drainage shall be provided for occupant-owned clothes washers and dryers. A prefabricated fiberglass waterproof laundry connection box enclosure shall also be provided.

#### 1.18 MECHANICAL DESIGN

#### 1.18.1 Mechanical Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the mechanical design work and following construction shall conform to the applicable requirements of the following:

- a. ARI 210/240 Air Source Heat Pumps
- b. ASHRAE 90.1
- c. ASHRAE 62
- d. ASHRAE HANDBOOKS

- (1) Fundamentals
- (2) HVAC Systems and Applications
- e. SMACNA DCS
- d. SMACNA HVACADLTM
- f. MIL-HDBK-1003/3
- q. MIL-HDBK-1190
- h. ME Guide

#### 1.18.2 Design Conditions

#### 1.18.2.1 Space Conditions

Space	Winter (FDB)	Summer (FDB/CWB) or RH)
Outside	24	92/78
Inside	68	78

(F = Degrees Fahrenheit)

(FDB = Degrees Fahrenheit, Dry Bulb)

(FWB = Degrees Fahrenheit, Wet Bulb)

(RH = Relative Humidity)

#### 1.18.2.2 Energy Calculations

Calculate energy consumption/building load using the latest version of the CABO Model Energy Code MECcheck computer program using default settings.

#### 1.18.3 Testing, Adjusting, and Balancing

The HVAC system in each building shall be tested, adjusted and balanced in accordance with Naval Facilities Guide Specifications (NFGS) Section 15700 "Heating, Ventilating & Air Conditioning" requirements, utilizing SMACNA HVACTAB version of "HVAC Systems Testing, Adjusting and Balancing (HVACTAB).

#### 1.18.4 System Description

Heating and cooling shall be provided by air-source heat pumps. Provide split-system with interconnecting refrigerant tubing. Outdoor and indoor units shall be ARI 210/240 unitary design and construction furnished by the same manufacturer. The minimum SEER of the system shall be as recommended by the Federal Energy Management Program. The heat pump system shall be controlled by an indoor wall thermostat with automatic change over from heating to cooling, and the electric resistance heat in the indoor unit shall be controlled by an outdoor thermostat. Provide a radio controller for the Base energy management system for load shedding. Filter access shall be at the unit. Locate the indoor unit in the garage. Provide an aluminum supply register in each living space based on the space load and located in accordance with the SMACNA Residential Comfort System

Installation Standards Manual. Provide an aluminum return grille at each floor level. Provide balance dampers in the main trunk ducts unless two heat pumps are provided in the unit. Flexible ductwork shall not be permitted. Insulate supply and return ductwork. Provide a kitchen exhaust hood above the range. Hood shall be vented outside. Clothes dryers shall be vented outside individually. Kitchen hood and clothes dryer vents shall terminate at a wall cap with a back draft damper. Each bathroom and half bathroom shall have an exhaust fan controlled by the light switch. The exhaust fan shall be vented outside with a back draft damper or bird screen at the vent cap.

#### 1.19 ELECTRICAL DESIGN

#### 1.19.1 Electrical Design Manuals and Standards

Except as specified or indicated otherwise in the RFP documents, the electrical design work and the following construction work shall conform to the applicable requirements of the following:

- a. NFPA 70
- b. NFPA 72
- c. IES LHBK
- d. IEEE C2

#### 1.19.2 Interior Distribution Systems

#### 1.19.2.1 Characteristics

Electrical characteristics for this project shall be 240/120 1-phase, 3-wire secondary.

#### 1.19.2.2 Interior Wiring

Interior wiring system shall be non-metallic sheathed cable (NMC) except for in the attic spaces, which shall be NMC cable run in electrical metallic tubing and shall be used for power, lighting and control circuits.

#### 1.19.2.3 Secondary Conductors

Conductors shall be copper. Minimum wire size shall be 12 AWG copper.

#### 1.19.2.4 Outlets

Provide outlets in accordance with the following requirements:

- a. As a minimum, provide outlets in accordance with NFPA 70.
- b. Provide a minimum of two outlets on every wall section greater than six feet in length.
- c. Provide one outlet in each intermediate stair landing and in

hallways or corridors.

#### 1.19.2.5 Lighting And Power Panelboard

Provide one panelboard per unit, flush wall mounted in the garage. Load centers will not be permitted.

#### 1.19.2.6 Panelboard General Rules

- a. Panelboards shall have working clearances as defined by NFPA 70. Mechanical equipment shall not infringe on these clearances.
- b. Provide one spare circuit for every five active circuits to allow for future load growth. Spare circuit capacity may consist of spare breakers or a combination of spare breakers and spaces.
- c. Number and identify each circuit in the panelboard as to type of load (lights, etc.) and general location (master bedroom, etc.).
- d. Number circuits by pole number on single pole breakers and by first pole number on two pole breakers.
- e. Panelboard shall be circuit breaker type.
- f. Panelboard service feeder from the meter base shall be run in conduit below grade.

#### 1.19.2.7 Fault Protection

Panelboards shall be designed to withstand and interrupt the available fault current as required. Provide short circuit calculations to justify selection for interruption capacity of panelboard.

#### 1.19.2.8 Cable Television (CATV) Service

CATV service shall include RG-6 cable, outlet boxes, outlet connectors and coverplates. Provide an outlet in all living spaces including the dining room, kitchen, family room, all bedrooms and two in the living room. Provide a separate cable from each outlet to the point of service. Point of service shall be 1GH bandwidth.

Design shall be in accordance with EIA/TIA-570.

#### 1.19.2.9 Telephone and Data Service

Telephone service shall consist of one phone and one computer outlet box, telephone RJ4S jacks, cover plates. Telephone service shall meet the requirements for a category 5 communications system. Provide outlets in all living spaces including kitchen, living, dining, and family rooms and all bedrooms. Provide two outlets in the living room and master bedroom.

Design shall be in accordance with EIA/TIA-570.

#### 1.19.3 Exterior Distribution Systems

All exterior distribution systems shall be provided by the public utilities (CP&L for Power, Time Warner for Cable TV, and Sprint for Telephone).

#### 1.19.3.1 Secondary Power

Secondary power shall be 240/120 volt, one phase, three wire.

#### 1.19.3.2 Secondary Conductors

Service entrance conductors shall be run underground by CP&L and terminate at the meter base.

Provide meter bases, in accordance with NEC requirements, in NEMA 3R enclosures with metal blank cover gaskets rated at 120/240 volt. Each meter base shall be provider with a main circuit breaker rated to handle the unit load. Unit load shall be calculated per the National Electric Code. Stub out conduit from meter base to below grade from service entrance cable by CP&L.

#### 1.19.3.3 Fans

Five blade, rheostat controlled ceiling fans with lighting kits are required in the living room and master bedroom.

#### 1.19.3.4 Telephone/Cable Television Service

The service points of connection shall each be on a terminal box mounted on the exterior wall of each unit.

#### 1.19.3.5 Smoke Detectors

Provide protection of all units with hard-wired smoke detectors with integral battery back-up. Provide interconnected smoke detectors in every bedroom, hall and on each floor.

#### 1.19.3.6 Carbon Monoxide Detector

One (1) permanently installed UL Listed carbon monoxide detector shall be provided in the living space on each unit.

#### 1.19.3.7 Grounding Systems

Proper grounding is essential both for safety and for the correct operation of electrical systems. Provide grounding systems in accordance with NFPA 70. Provide grounding plans and details as part of the project drawings.

#### 1.19.4 Lighting

#### 1.19.4.1 Design Criteria

#### a. IES LHBK

#### 1.19.4.2 Levels

Provide illumination levels in accordance with recommendations in the IES LHBK. Design to conserve energy and provide a pleasant and comfortable living environment.

#### 1.19.4.3 Lighting Fixtures

Provide energy saving lamps and ballasts for all fluorescent lighting fixtures. Lighting fixtures shall be as follows:

- a. Bathrooms; Light over mirror and on the ceiling (incandescent).
- b. Kitchen: Light over sink and on the ceiling (fluorescent).
- c. Utility Room: Light on the ceiling (incandescent).
- d. Closets: Light on ceiling for walk-in closets only (incandescent).
- e. Garage: Light on ceiling (strip fluorescent with cold temperature ballast).
- f. Dining Room: Suspended decorative chandelier on dimmer control (incandescent).
- q. Exterior: Wall mount above or adjacent to each door.
- h. Address Numbers: Internally illuminated.
- i. Living Room: Ceiling fan with incandescent light kit.
- j. Family Room: Light on ceiling (incandescent).
- k. Hallway and Storage: Light on ceiling (incandescent).
- 1. Bedrooms: Light on ceiling (incandescent).
- m. Master Bedroom: Ceiling fan with incandescent light kit.

#### 1.19.4.4 Street Lighting

All street and area lighting fixtures will be provided by CP&L.

#### 1.19.5 Magnetic Contactors, Motor Controllers and Disconnect Switches

#### a. HVAC Equipment

- (1) The mechanical engineer will determine which equipment will have integral magnetic contactors and/or disconnect switches and which equipment will require separate magnetic motor controllers and disconnect switches. In general, packaged refrigeration equipment has integral magnetic contactors and in some instances will have an integral disconnect switch also. Air-handling units and pumps usually require separate magnetic motor controllers and disconnect switches.
- (2) The electrical engineer, in conjunction with the mechanical engineer, will determine the location of separate magnetic motor controllers and disconnect switches. Magnetic motor controllers and disconnects shall be placed in readily accessible locations as defined by NFPA 70.

#### PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

Not Used.

-- End of Section --

## **ATTACHMENT 1**

# PRIORITY LIST & ADDED VALUE MATRIX SLOCUM VILLAGE FAMILY HOUSING PHASE I

## MCAS CHERRY POINT SLOCUM VILLAGE FAMILY HOUSING PHASE I

## **PRIORITY LIST**

1. Wall and roof framing -Metal studs and metal framing Equal priority with:

Additional Brick to Designer's discretion

- 2. Additional units
- 3. Split HVAC system with separate upstairs system
- 4. Double sinks in full bathroom
- 5. Decorative open metal staircase

## RFP REQUIREMENTS / ADDED VALUE MATRIX

Room Name/Description	RFP Minimum	Station Preference/Added
	Requirements	Value
Bathrooms		
See section 01155,	Sink: Single porcelain in all	Sink: Double sinks in Full
Para. 2.3.4.9, 2.3.4.10,	baths	bath
2.3.4.11		
Structure & Exterior	Wood framing with brick	Metal framing with additional
	veneer wainscot on lower	brick veneer at Contractor's
See section 01158, Para.	42" of facades, vinyl siding for	discretion
1.12.6	remainder	
Floor & Stair Construction	Open wood staircase without	Metal open staircase
	walls or enclosures. Wood	w/decorative balusters &
See section 01158, Para.	framing nailed, screwed,	railings, metal risers & treads.
1.13.5.3, 1.12.13	bolted & glued	Stair has to meet requirements
		of Life Safety Code. Frame
		stairs separately
Roof Structure	Prefabricated wood roof	Metal open web joist w/ metal
See section 01158, Para.	trusses w/ wood sheathing	deck
1.12.14, 1.13.5.4		
HVAC split system	One split system provided	Upgrade and provide two heat
		pump systems, one for second
		floor, separate zones
Number of units	Minimum of 270 units	Maximum of 347 units

## **ATTACHMENT 2**

EXISTING CONDITIONS FROM "SITE INVESTIGATION REPORT FOR HANCOCK AND SLOCUM VILLAGES HOUSING PROJECT", APRIL 2001, PREPARED BY GREENHORNE & O'MARA, INC.

#### SITE INVESTIGATION REPORT

#### 1.0 INTRODUCTION

Greenhorne & O'Mara, Inc. (G&O) conducted a site investigation to assess conditions of the existing site, utilities, infrastructure, and housing units in Slocum and Hancock Villages at MCAS Cherry Point, North Carolina. The site and housing unit field investigations were conducted March 19 through March 23, 2001.

#### 2.0 OBJECTIVES

The objectives of the site and housing unit investigations were to:

- Define the design parameters for the development of a Design/Build Request for Proposal for the Housing Replacement in Slocum and Hancock Villages at MCAS Cherry Point, North Carolina;
- Evaluate and analyze existing building structures, easements, and other physical elements of the Slocum Village site and consider their feasible integration and impact on the development of a Phasing Plan and Master Plan;
- Identify existing building structures to remain and evaluate alternatives for maintaining access to them during the construction process;
- Evaluate conditions of the existing utility infrastructure;
- Determine the most feasible approach to phase the demolition and construction sequence for the housing replacement project without impacting the rest of the housing units in the neighborhood;
- Select the specific housing project area within the neighborhood with consideration of the existing identified constraints in Slocum Village;
- Identify existing civil and site elements to be demolished;
- Identify existing building systems, components, and gross square footage of housing units to be demolished;
- Estimate the number of housing units to be demolished and built; and
- Prepare preliminary alternatives for the demolition/construction phasing plan.

#### 3.0 METHODOLOGY

The field investigation consisted of the visual physical inspection of the site and housing units. No disassembly, destructive tests, or excavation were performed.

Other methods of gathering and collecting information utilized for the site and housing unit investigations were:

- Reviewing existing utility plans;
- Interviewing MCAS Cherry Point Station key personnel; and
- Interviewing utility providers.

#### Site Investigation Report

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A programming meeting was conducted at MCAS Cherry Point with representatives from LantDiv, Cherry Point Facilities Development and Housing Facilities, and Greenhorne & O'Mara. The attendees discussed the findings of the field investigation as consolidated and presented by the Greenhorne & O'Mara team. Greenhorne & O'Mara also presented different schemes and alternatives for the construction phasing plan and design features and material selection for the housing replacement project. A preliminary cost estimate was performed and discussed. The representatives from LantDiv, Cherry Point, and Greenhorne & O'Mara exchanged ideas, made suggestions, and eventually concurred on the prioritization of building materials that would keep the housing project within the estimated construction cost (ECC). The participants also established a preliminary number of housing units to be demolished and a number of housing units to be built.

#### 4.0 PROJECT DESCRIPTION

The project consists of the demolition and replacement of housing units in the Hancock Village and Slocum Village Family Housing areas of MCAS Cherry Point. Approximately 167 units will be demolished at Hancock Village and approximately 275 units will be demolished at Slocum Village. In return, approximately 275 units will be rebuilt at Slocum Village.

The work will be phased over time to accommodate the ongoing need for military housing on-Station. No more than 100 units will be taken out of service at any one time. This number of units will enable current Slocum Village residents to move into other vacant units on-Station.

A Master Plan will be provided for the replacement of all 775 Slocum Village housing units over the next two to three years. This plan will assist in the planning and sequencing of roadways, utilities, and other infrastructure upgrades.

#### Hancock Village

Hancock Village is located west of Route 101. The Village is off-Station, but adjacent to the MCAS boundary, the main gate, and the boundaries of the airfield. The overall housing type at Hancock Village is referred to as Wherry. Unit and building types are distributed as follows:

Unit Type	<b>Building Type</b>	Unit Grouping	Number of Units
1-bedroom	1-story	Duplex	36
2-bedroom	1-story	Duplex	214
3-bedrooom	1-story	Detached, single-family	88
4-bedroom	1-story	Detached, single-family	9
		TOTAL	347

Hancock Village

#### Slocum Village

Slocum Village is located North of Route 70, the busy arterial highway that provides access to MCAS Cherry Point and the City of Havelock. The housing area occupies government property that is adjacent to the boundaries of MCAS, but is physically separated from the core of the

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Station by the Slocum Creek drainage basin. The overall housing type at Slocum Village is referred to as Wherry, the same type as found in Hancock Village. Unit and building types are distributed as follows:

#### **Slocum Village**

Unit Type	<b>Building Type</b>	Unit Grouping	Number of Units
1-bedroom	1-story	Duplex, quadruplex, and six-plex	42
2-bedroom	1-story	Quadruplex and five-plex	254
2-bedroom	2-story	Quadruplex	236
3-bedrooom	1-story	Quadruplex	203
4-bedroom	1-story	Remodeling of combined one-	40
		bedroom duplex	
·		TOTAL	775

#### 5.0 EXISTING CONDITIONS

#### 5.1 Civil Conditions

The existing civil conditions provided herein are for Slocum Village only. Because the new housing will be constructed within the boundaries of Slocum Village, the existing civil conditions at Hancock Village are not a priority.

#### **Utilities**

#### **Sanitary Sewer**

The sanitary sewer system in Slocum Village is similar in design to other Military Family Housing sewer systems. The sanitary system consists of pumping stations and force mains, which connect local gravity systems to the Station treatment facility. The current sanitary configuration uses gravity collection to move sewage to a location in Slocum Village that is near the treat facility for the City of Havelock. The sewage is then pumped through a force main to the on-Station facility at a crossing on an existing footbridge.

The existing system has been repaired on several occasions. The component materials consist of PVC, iron, and vitrified clay pipe. There are currently large amounts of inflow and infiltration, due to open and offset joints. As a result, the system is pushed to its limits during storm events. Additionally, the sewer lines have grease buildup, swags in the lines, and broken lines. The manholes are constructed with brick and/or block and cement mortar, which is deteriorating and in poor condition. Some manholes have seal leaks in the frames.

Station personnel have identified the poor condition of the sewer lines in Slocum Village as a major problem.

#### Potable Water

The Marine Corps Air Station (MCAS) provides water for Slocum Village. The MCAS water supply is pumped from on-site wells, treated at a plant on Roosevelt Boulevard, and transferred to pressure towers for local distribution. The water plant was recently upgraded (MCON P-017) to

#### Site Investigation Report

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include an ozonation water purification system. The upgrade provides adequate capacity for the existing housing in Slocum Village. Primary distribution is by water mains located along Roosevelt Boulevard. Some mains cross Slocum Creek to provide service for NCO Townhouses/SNCO Capehart and Slocum Village, Ft. Macon, and Hancock Village, which are also connected to this system through water mains along Cunningham Boulevard.

The existing mains and valves in Slocum Village are in very poor condition. The water mains have rusted and have large interior nodules. The valves are in poor condition and will not seal off when closed.

The existing system can produce an average of 3.63 mgd, with a maximum production rate of 4.54 mgd. The capacity of the water supply and treatment systems is adequate to support current and projected demands. Component material for the water lines in Slocum Village are iron pipe and PVC pipe and range in size from 4" to 8 (per FIS Project #5096, Infrastructure Investigation, Slocum Village, 15 June 1998).

Water is provided at no cost to the residents of Slocum Village and currently there are no meters installed.

There have been conflicting reports regarding the flow and pressure at Slocum Village. Some base personnel report that there is adequate pressure, while others state there is a problem with low flow and pressure. Base personnel have uniformly identified the poor condition of the water lines as a major problem at Slocum Village.

#### **Storm Drains**

The storm drain system in Slocum Village consists of a network of pipes designed to collect water through curb and gutter, inlets, ditches, and channels. The system discharges into Slocum Creek. Original design data was unavailable.

The pipe system was rated in fair condition, although the pipes are old and there have been numerous repairs. The drainage system component materials consist of RCP, PVC, and clay pipe. Some of the problems noted include: clogged and broken inlets, broken headwalls, sediment buildup in channels and pipes, and standing water (per FIS Project #5096, Infrastructure Investigation, Slocum Village, 15 June 1998).

Because of the area's relatively flat topography, the groundwater is close to the surface. As a result, there are shallow slopes within the storm drain systems. An insufficient pipe slope cannot accommodate the runoff from intense and/or sustained rainfall. Larger pipes and a new pipe/channel system could correct these deficiencies.

# **Electrical, Cable and Telephone Services**

The housing areas are currently served by overhead power distribution lines, which are owned by the local utility company, Carolina Power and Light. The power is three-phase and separates to single-phase throughout the sites. Each site has multiple locations where power service enters. In Slocum Village, the power distribution also serves the wastewater treatment plant and the school. The power wiring is run on wooden poles with pole mounted transformers. There is one service entrance per building with multiple meter bases. In general, the existing poles are in fairly poor condition.

The sites have cable television service provided by Time-Warner Cable. The signal is distributed through underground wiring. The routing of the underground wiring follows the electrical power poles for the most part. As with the electrical power, there is one service entrance per building.

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The sites have telephone service provided by Sprint. The service is distributed through underground wiring. The routing of the underground wiring also follows the electrical power poles. Each building has one service point and the signals are divided from there.

# **Street Lighting**

Street lighting is provided from the main power distribution lines. The street lights consist of metal halide-type fixtures mounted on wooden poles. The lights are spaced approximately 200 feet apart.

#### 5.2 Site Conditions

Site condition descriptions are provided for both Slocum Village and Hancock Village. The site conditions include specific features associated with the individual housing neighborhoods such as: streets, sidewalks, recreation facilities, and landscape elements. Site conditions for Slocum Village are presented first, followed by a description of the site conditions at Hancock Village.

### Slocum Village

Slocum Village is the largest of three Military Family Housing (MFH) areas located off-Station. Primary access is via U.S. 70, the busy arterial highway that provides access to MCAS Cherry Point and the City of Havelock. The housing area occupies Government property that is adjacent to the boundaries of MCAS, but is physically separated from the core area by the Slocum Creek drainage basin. Slocum Village currently provides housing for Marine Corps E4 and E5 married enlisted personnel. The general site statistics for this residential neighborhood are as follows:

<b>Existing Units</b>		Site Features	
Wherry Multiplex	775	Site Area	136 Acres
		Open Space	20 Acres (15%)
		Density	5.7 DU/Ac (Low)
Total Units	775	Rec. Facilities	1 - Large Tot Lot
			23 - Small Tot Lots
			1 - Basketball Court
			1 - Handball Court Bldg
			2 - Tennis Courts
			1 - Trail Connection

Slocum Village was originally purchased by the government to add housing to MCAS Cherry Point and included existing structures. There are two neighborhood entrances from U.S. 70. Both entrances have traffic signals. One entrance is adjacent to a MCAS Cherry Point fire station. The other entrance area is surrounded by private sector office, commercial, and residential development. This development is visible from several locations within the neighborhood.

Beyond the entrance, the housing units are surrounded by woods and the Slocum Creek drainage basin. Twenty acres, or 15%, of the total open space is made up of these natural features. The internal open space however, is inadequate in many instances. The site is generally flat and gently slopes toward the creek. The neighborhood experiences the typical drainage problems

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associated with such a large (136 acres) "creek-side" location. A City of Havelock sewer treatment plant and a large potable water tower are sited in or adjacent to the neighborhood. Since the addition of this housing area to the MCAS, the units have been renovated and facilities added or expanded, such as recreation courts and parking areas.

Off-street parking consists of parking lots surrounded on three sides by the housing units. Some on-street parking occurs. Common open space is located to the rear of the units.

A public school, Graham A. Barren Elementary School, adjoins the Slocum Village property. Access to the school is provided along streets maintained by MCAS. Access to this school will have to be maintained throughout construction.

#### Streetscape

The aesthetic quality of the Slocum Village streetscape is dominated by its proximity to U.S. 70 and by the monotonous and somewhat institutional character of the unit facades. The street pattern is functional and logical but the curb, sidewalk, and paving is old and deteriorating. The curb appeal is poor due to unattractive site amenities and large, paved areas with minimal landscape screening. Although the overhead electrical service wires are strung behind the units, the street lights are supplied by overhead wiring on the street and the fixtures are mounted on unattractive poles. The entrance signs identifying the neighborhood have an institutional appearance and the entrances in general are crowded with views of utilities, old site amenities, and housing units that are too close to the entry. Some units actually face U.S. 70 along the service road and have inadequate setback to the highway. All of these existing site features diminish the neighborhood character, residential identity, and sense of arrival that is typically provided in quality private sector communities.

One site feature, a pedestrian and bike trail connection to the core area, is a valuable amenity that is comparable to private sector neighborhoods. It provides convenient access to the main Station and is aesthetically pleasing. The path even has a picturesque wooden bridge across Slocum Creek. Several of the recreation facilities, such as the new tot-lot and the tennis courts, are clustered in one of the larger open space areas, but there is no community center.

#### Hancock Village

The Hancock Village MFH area is located off-Station on government property adjacent to the MCAS boundary, close to the main gate and the runways of the airfield. The neighborhood is accessed from NC Route 101 across from Havelock High School. There are two entrances but neither has a signal. Hancock Village was originally constructed as officer housing, but it has been converted to enlisted housing for Marine Corps E-4 and E-5 married personnel and their families. Hancock Village is popular with residents because the units are all one-story and there is generous amount of open space. The open space makes the neighborhood seem quiet and private compared to other Wherry housing areas. The general site statistics for this residential neighborhood are as follows:

<b>Existing Units</b>		Site Features	
Wherry Duplex	254	Site Area 105 acres	
Wherry Single-Family Detached (SFD)	93	Open Space 32 acres (30%)	
<b>Total Units</b>	347	Density 3.3 DU/Ac (Low) Rec. Facilities 1 - Large Tot Lot 13 - Small Tot Lots	

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- 1 Basketball Court
- 1 Handball Court Bldg
- 2 Tennis Courts

The neighborhood character is pleasant with generous open space (30 percent) that is well distributed, easily accessible, and developed with appropriate facilities. The site design is reminiscent of a private sector single-family subdivision with curving streets, a well-developed landscape, and a good stand of existing mature trees. Large open space areas in the rear of the houses are developed with playgrounds, tennis courts and basketball courts. Housing units that face NC Route 101 have access from a frontage road creating attractive views along the highway while providing convenient access to occupants. All of these site features combine to give Hancock Village a good sense of identity with residential character.

The existing units in this neighborhood are a combination of Wherry style duplex and single-family detached residences. This variety of unit types, although similar in appearance, improves the streetscape visual quality. One of the most significant visual problems stems from the lack of driveways and off-street parking that places all parking on the street making it cluttered, crowded and inconvenient for residents. Although driveways are not required for family housing areas, off-street parking (two spaces per unit) is required, with on-street parking to be provided for guests and overflow parking. Generally speaking, private drives are appropriate for single-family and duplex units while off-street parking lots are typically used for townhouse and apartment housing areas.

As typical of most locations in the area, the site is very flat and drainage is a critical site constraint. Aggressive solutions have been implemented here with large open swales that drain to an off-site collection pond that has to be pumped for outfall. Although this approach has solved most on-site drainage problems, the concrete and grass open swales are unsightly, difficult to maintain, and create safety hazards. A chain link boundary fence encloses the site on three sides, which is primarily surrounded by mature stands of pine trees.

#### **Streetscape**

Streetscape conditions are similar for both Slocum and Hancock Villages with streets that consist of approximately 30'asphalt travel lanes, concrete curb/gutter/storm drain, and a 4' sidewalk, typically located at the back of curb on both sides of the street. The concrete system components are deteriorated and often in poor condition. In Slocum Village, numerous off-street parking lots are located central to unit groupings to provide parking in addition to on-street spaces. As parking demand has risen, additional small lots have been added to the streetscape where possible. Hancock village has no large off-street parking areas, since it is a less dense neighborhood and all parking is provided on street. Electric lines and streetlights are located on power poles creating an unsightly overhead system. Street trees are inconsistent and entrance features are small brick walls with neighborhood identity signage found in one or two locations. Mail facilities, such as small gang mailboxes, are distributed along the streetscape accessed by sidewalks. Public phones typically occur in one or two locations in each neighborhood.

#### **Recreation Facilities**

Recreation facilities are located in common open space areas typically at the rear of units, which face the streetscape. Facilities consist of numerous tot lots, playgrounds, and court areas. Both neighborhoods have a handball court building, 2 tennis courts and one basketball court. No ball fields are located at the two neighborhoods. Most of the original playgrounds are small with

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older swings, metal climbers, and spring toys. These smaller playgrounds have generally been replaced with new larger facilities or removed from the neighborhood. Newer playgrounds have play structures, swings, and slides on a sand play surface enclosed by timber edging.

### **Open Space**

Both neighborhoods have a generous amount of common open space predominantly located at the rear of dwelling units. Hancock Village is located in a site that is very flat.

The open space areas are used for drainage with numerous open drainage swales. Slocum Village has as similar open space treatment, however since the topographic relief is greater, less of the area is utilized for such drainage facilities. Open spaces in both neighborhoods have mature trees and large areas of turf with few recreation trails or other features. Often, underground utilities are run through the open space areas to provide service to the units. Utilities are also located in the streetscape and front yard areas of both sites.

### Landscape

The landscape treatment at both sites consists mostly of scattered mature shade trees and foundation plantings at the fronts of dwelling units. Few evergreen plantings, woodlands, or ornamental planting can be found in the two neighborhoods. Street trees occur in some locations, but they are not consistent along the streetscape.

# **5.3** Building Conditions

The 775 Slocum Village Wherry units were built in 1952 and house NCO Enlisted E4-E5 personnel. The units are housed in quadruplexes, five-plexes, and six-plexes, and built slab-ongrade. Combining two adjacent smaller units has created the four-bedroom units.

The 347 Hancock Village Wherry units were also built in 1952 and house NCO Enlisted E4-E5 personnel. The one-story dwelling units consist of 97 single and 250 duplex homes.

Although minor variations may exist in the Villages due to spot repairs or tenant alterations, materials and finishes in the sample investigated units were consistent.

# Materials and Finishes at Hancock and Slocum Villages

Exterior Materials and Finishes		
Roof	Hip and gable form with asphalt shingles on main house, porches	
	have flat built-up roof.	
Gutters and Downspouts	None.	
Soffits	Vinyl perforated.	
Fascias	Aluminum.	
Walls	2x6 wood frame with vinyl siding.	
Windows	Vinyl clad double hung sash with 1/2 screens or sliding sash with	
	1/2 screens.	
	Kitchen: 37" wide x 52"	
	Bedroom: 68" wide x 49" typical	
	Living Room: 68" wide x 37" and/or 98" wide x 49"	
	Dining Room: 35" wide x 37"	
	Wood aprons & stools.	
Doors	Solid wood door with light in wood frames, both front and rear.	

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	Front doors have fan-shaped light, rear doors have large	
	rectangular glass pane covering half the door. Laundry/ storage	
	door is solid wood with no light.	
	Storm/screen doors are provided for the front door only and are	
	aluminum with 1/2 glass.	
Screened Porch	Wood framing with a concrete floor and plywood ceilings.	

# Interior Materials and Finishes at Hancock and Slocum Villages

Interior Materials and Finishes		
Floor	VCT, with wood baseboards in most rooms. Sheet vinyl with	
	vinyl or wood baseboards in the bathroom and kitchen. Carpet	
	provided on stairways in two-story units.	
Walls	Gypsum board, smooth or textured finish, with wood baseboard.	
Ceilings	Gypsum board, smooth or textured finish. 8' ceiling height.	
Doors	Pre-hung hollow core wood doors	
	Bedrooms: 2'6" wide	
	Bathrooms: 2' wide	
	Closet: 2' wide, pre-hung	
	Some units have bifold linen closet doors.	
Closets	Wood rod and one wood shelf.	
Kitchen Cabinets	Plywood with plastic laminate countertop.	
Bathrooms	Fiberglass tub surround, faux marble countertop with wood	
	vanities, metal medicine cabinets, and stainless steel accessories.	
Laundry/storage	Located within screened porch. Plastic laminate wainscot with	
	gypsum board walls and ceilings. No shelves are provided.	

# 5.4 Mechanical, Electrical and Plumbing Systems

The existing houses are air-conditioned and heated using split system heat pumps. The heat pumps are between ten and fifteen years old. The ductwork is sheet metal and is installed in the attic. The outdoor heat pump unit is located in the rear of the units, and the indoor unit is located in a closet inside the house. The kitchen hoods are vented to the outdoors, and each bathroom has a ceiling exhaust fan.

Each housing unit has a separate electrical panel. The panels are rated for 100 amps and utilize circuit breakers. Every room has receptacles that are spaced approximately ten feet apart. The units have ceiling mounted incandescent lights in each room. Each housing unit has a telephone outlet in the kitchen and master bedroom. Each housing unit has a cable television outlet in the living room and the master bedroom.

The plumbing systems in the housing units consist of copper water piping and cast iron sanitary piping. All of the housing units have an electric water heater with between 30 and 50 gallons of

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storage capacity. Where visible, the water piping is insulated with fiberglass insulation. The existing toilets are tank type toilets. All of the units have at least one exterior hose bib.

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# **SLOCUM VILLAGE**

U.S. Route 70 at Holly Drive entrance showing signalized intersection, streetscape, overhead electric, and typical units facing the street.



# **SLOCUM VILLAGE**

U.S. Route 70 at Jackson Drive entrance showing typical entrance feature with signage.



**SLOCUM VILLAGE** Existing fire station to remain.



**SLOCUM VILLAGE**Existing school (Graham A. Barden Elementary) to remain.



**SLOCUM VILLAGE**Sewer treatment plant (City of Havelock) to remain.



**SLOCUM VILLAGE**Road, curb and gutter, concrete sidewalk, and existing water tower to remain.



#### **SLOCUM VILLAGE**

Typical streetscape showing walks, street paving, parking, overhead electric and streetlights mounted on electric poles, mature trees and street signage.



**SLOCUM VILLAGE** 

Typical off-street parking area.



**SLOCUM VILLAGE**Typical rear yard common open space.



**SLOCUM VILLAGE** Typical playground.



**SLOCUM VILLAGE**Typical basketball court adjacent to the water tower.



**SLOCUM VILLAGE**Typical tennis court in common open space.



**SLOCUM VILLAGE**Existing pedestrian/bike path and bridge over Slocum Creek to remain.



SLOCUM VILLAGE
TYPICAL FRONT ELEVATION – MULTIPLEX BUILDING, ONE-STORY
Vinyl Siding and Hipped Roof Asphalt Shingles



SLOCUM VILLAGE
TYPICAL FRONT ELEVATION – MULTIPLEX BUILDING, ONE-STORY
Vinyl Siding and Hipped Roof Asphalt Shingles



SLOCUM VILLAGE
TYPICAL REAR ELEVATION – MULTIPLEX BUILDING, ONE-STORY
Vinyl Siding and Asphalt Shingles for Main Housing Units and Flat Built-up Roof
for Screened Porches



SLOCUM VILLAGE
TYPICAL SIDE ELEVATION – MULTIPLEX BUILDING, ONE-STORY
Vinyl Siding and Asphalt Shingles for Main Housing Units and Flat Built-up Roof for Screened Porches

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SLOCUM VILLAGE TYPICAL SIDE ELEVATION – MULTIPLEX BUILDING, ONE-STORY



HANCOCK VILLAGE
TYPICAL FRONT ELEVATION – SINGLE FAMILY DETACHED
Vinyl Siding , vinyl clad windows and asphalt shingles.



HANCOCK VILLAGE
TYPICAL SIDE ELEVATION – SINGLE FAMILY DETACHED



HANCOCK VILLAGE
TYPICAL REAR ELEVATION – SINGLE FAMILY DETACHED

Vinyl Siding and Asphalt Shingles for Main Housing Units and Flat Built-up Roof for Screened Porches



HANCOCK VILLAGE
TYPICAL FRONT ELEVATION – DUPLEX UNITS
Vinyl Siding and Asphalt Shingles, Vinyl Clad Windows, Concrete Stoop, and Aluminum Storm Door.



HANCOCK VILLAGE
TYPICAL SIDE ELEVATION – DUPLEX UNITS



HANCOCK VILLAGE TYPICAL REAR ELEVATION – DUPLEX UNITS



SLOCUM VILLAGE
TYPICAL FRONT ELEVATION – MULTIPLEX, CENTER UNIT, TWOSTORY BUILDING

Vinyl Siding, Vinyl Clad Windows and Asphalt Shingle Roof.



SLOCUM VILLAGE TYPICAL COVERED ENTRANCE - MULTIPLEX, CENTER UNIT, TWO-STORY BUILDING

Concrete Stoop, Metal Columns, Aluminum Storm Door and Flat Built-up Roof



SLOCUM VILLAGE TYPICAL SIDE ELEVATION – MULTIPLEX, CENTER UNIT, TWO-STORY BUILDING



SLOCUM VILLAGE
TYPICAL REAR ELEVATION – MULTIPLEX, CENTER UNIT, TWOSTORY BUILDING



SCREENED IN PORCH, TYPICAL FINISHES Concrete Floor, Wood Framing and Plywood Ceiling.



**TYPICAL PORCH** 



TYPICAL STORAGE/LAUNDRY LOCATED ON SCREENED-IN PORCH



**TYPICAL KITCHEN WITH BREAKFAST BAR** Plywood Cabinets and Plastic Laminate Countertop.



TYPICAL KITCHEN



**TYPICAL BATHROOM**Vinyl Sheet Floor and GWB Walls and Ceiling



**TYPICAL BATHTUB ENCLOSURE** Fiberglass Tub Enclosure



TYPICAL LIVING ROOM/DINING ROOM SPACE VCT Floor, Wood Base Board and GWB Walls and Ceiling

Site Investigation Report

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TYPICAL FRONT DOOR
Solid Core Wood and Aluminum Storm Door



TYPICAL REAR DOOR
Solid Core Wood With Glass Inserts



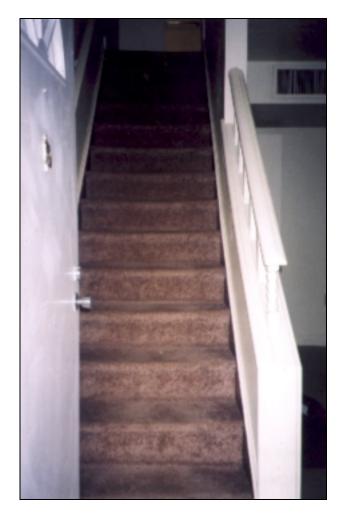
**TYPICAL INTERIOR DOOR** Flush Hollow Core Wood



TYPICAL LINEN CLOSET Wood Shelves Painted



TYPICAL BEDROOM CLOSET (1) Wood Shelf Painted and Rod



SLOCUM VILLAGE
TYPICAL INTERIOR STAIRS, 2-STORY BUILDING
Carpeted Stairs and Wood Handrail



TYPICAL WATER HEATER



TYPICAL FURNACE



WATER HEATER IN LAUNDRY ROOM



OVERHEAD ELECTRICAL SERVICES



TYPICAL ELECTRIC PANELS



TYPICAL INDOOR HEAT PUMP UNIT



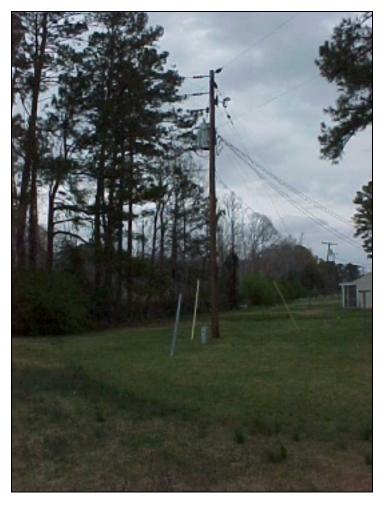
TYPICAL OUTDOOR HEAT PUMP UNIT



TYPICAL UNIT ELECTRICAL PANEL



TYPICAL ELECTRICAL SERVICE ENTRANCE TO A BUILDING



TYPICAL POWER POLE

# ATTACHMENT 3 EXISTING SITE DATA

#### PUMP AND MOTOR DATA

Pump Data	Pump 1	Pump 2
Design Characteristics (GPM@TOH)	500 @ 54'	500 @ 54'
Pump Model	4B2A	4B2A
Impeller Diameter	8-1/2"	8-1/2"
Rotation (CW) (CCW)	CW	CCW
S&L Mech. Seal-Filter Ass'y (Size)	1-7/8"	1-7/8"
Pump Serial Number		
Motor Data (Inventory Code)	15	15
Horsepower R.P.M.	1760	1760
Phase/Cycle/Volts  Motor Serial No. (Code Ltr.)	3/60/230	3/60/230
Squirrel Cage (SC) or Wound Rotor (WR)	SC	SC
Special Modifications		
Across the Line (AL) or Part Winding (PW) Start	AL	AL

Source: MCAS Cherry Point, NC

Hydrant Number	Manufacturer	Static Pressure PSI	Discharge Port Diameter	Pitot Pressure PSI	Flush Rate GPM
490	Mueller 5 1/4	60	2.5	28	987
493	Mueller 5 1/4	60	4.5	5	1350
501	Mueller 5 1/4	60	4.5	3	1045
500	Mueller 5 1/4	60	4.5	2	854
497	Mueller 5 1/4	60	4.5	2	854
496	Mueller 5 1/4	60	4.5	5	1350
494	Mueller 5 1/4	60	4.5	5	1350
492	Mueller 5 1/4	60	2.5	10	590
502	Mueller 5 1/4	60	4.5	2	854
503	Mueller 5 1/4	60	4.5	3	1045
498	Mueller 5 1/4	60	4.5	2	854
499	Mueller 5 1/4	60	4.5	3	1045
495	Wood	60	4.5	5	1350

Source: MCAS Cherry Point, NC

#### **ATTACHMENT 4**

HAZARDOUS MATERIAL SURVEY REPORT Full report provided under separate cover Executive Summary provided as Attachment 4

#### **EXECUTIVE SUMMARY**

Greenhorne & O'Mara, Inc. (G&O) has completed a Hazardous Materials Survey for housing units designated for demolition in accordance with the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command's (LANTDIV) program for family housing replacement at Hancock Village and Slocum Village. The Hancock Village and Slocum Village family housing neighborhoods are located at Marine Corps Air Station (MCAS) Cherry Point, Havelock, North Carolina.

The study was performed to characterize specific environmental conditions, including the presence of asbestos-containing materials, lead-based paint, PCB-containing light ballasts and mercury containing thermostats and fluorescent lamps. These materials may require abatement, engineering controls or other special procedures during demolition in accordance with applicable regulatory requirements and to properly protect human health and the environment. The work was performed pursuant to A&E Contract No: N62470-96-B-8033.

The study was based on observations and data collected during field investigations conducted between April 15 and April 25, 2001 along with a limited follow up investigation conducted between May 21 and May 24, 2001. Reports summarizing previous environmental investigations, performed by the Navy Public Works Center in 1994 were reviewed prior to conducting the surveys. These reports included the *Asbestos Management Plan* and *Lead Management Plan* for *Fort Macon/Hancock Village/Slocum Village, Marine Corps Air Station Cherry Point, Havelock, North Carolina*.

G&O performed surveys of 82 (approximately 30%) of the 278 housing units included in the Phase I area of Slocum Village and 42 (approximately 30%) of the 167 housing units included in the Phase I area of Hancock Village. When the demolition area was redefined subsequent to the field investigation, this resulted in some of the surveyed units in Hancock Village being removed from Phase I. This should not affect the conclusions of this report.

The surveys included the collection and analysis of bulk samples of suspected asbestos-containing materials (ACM) and the evaluation of painted surfaces for lead content using a direct reading X-Ray Fluorescence (XRF) analyzer. In addition, the surveys assessed the extent to which PCB-containing light ballasts and mercury containing items (fluorescent lamps and thermostats) were found in the housing units.

The objective of the field investigation was to gather sufficient information to identify hazardous materials in the housing units and to provide locations of materials for hazardous material removal work as required in the RFP for demolition work.

This study has identified ACMs, lead-based paint, PCB-containing ballasts and mercury-containing equipment in the housing units of Hancock Village and Slocum Village. The demolition of housing units will require the removal and proper disposal/recycling of hazardous materials. For bidding purposes, the contractor shall use the survey information presented in Tables 3, 4, 5 and 6 along with the demolition drawings. Information on lead-based paint is contained in narrative descriptions presented in Section 3.

Hazardous Materials Report

Page 1

#### **ATTACHMENT 5**

# GUIDE SPECIFICATION EXCEPTIONS SLOCUM VILLAGE FAMILY HOUSING PHASE I

# **GUIDE**

# **SPECIFICATION**

# **EXCEPTIONS**

08/14/2000

#### **GENERAL**

- 1. Application. In addition to the requirements listed in the NFGS Guide Specifications (specs), LANTDIV Sample Specs, LANTDIV Local Masters, and LANTDIV Advanced Copies of Specifications, the exceptions listed herein shall apply to all these specs as specified and shall be incorporated for all LANTNAVFACENGCOM (LANTDIV) design/build projects.
- 2. Precedence of RFP. The exceptions listed in this document are general in nature and apply to all LANTNAVFACENGCOM design/build projects. Even if a system spec section is mentioned in this general list, the subject system (spec) cannot be used in the project if the system is not allowed by the project RFP criteria. In other words, a mention of a given system (and spec section) in the list of general exceptions does not take precedence over the requirements of the RFP documents.
- 3. NOTE: (To Specifier). The Navy specs listed above in paragraph "Application," contain NOTE: (s) that are bounded at top and bottom by asterisks. These are instructions to the specifier editing the spec, which help with selecting the appropriate requirements for a given type of construction. The instructions to the specifier given in all such NOTE: (s) shall be considered mandatory instructions to the Contractor's Designer of Record (DOR) in the preparation of this project's design specifications. An exception to this is specified below in paragraph "NOTE: Locale."
- 4. NOTE: Locale. For each Note to the Specifier, or SGML tag, that states a given requirement applies to LANTNAVFACENGCOM projects, that requirement shall be considered mandatory for LANTNAVFACENGCOM projects. For each such note, or tag, that states a given spec requirement does not apply to LANTNAVFACENGCOM projects, that requirement shall be deleted from the project spec.
- 5. DOR Approvals. Submittal items in the guide specification annotated with a "G" are reserved for approval by the Contractor's DOR. All such submittals in the guide specifications shall be submitted to the DOR for review and approval. Chapter 11 of the Specification Preparation Manual, avail on the LANTDIV Design Division homepage at <a href="https://www.efdlant.navfac.navy.mil/lantops-04/home.htm">www.efdlant.navfac.navy.mil/lantops-04/home.htm</a> select "Specifications", designates additional submittal items that shall be marked with a "G" for designer of record review and approval.

#### **DIVISION 02 – SITE WORK**

#### **SECTION 02315 – EXCAVATION AND FILL**

#### 3.9 DISPOSITION OF SURPLUS MATERIAL

Surplus material shall be removed from Government property. The Contractor shall identify any surplus demolition material that may be recycled as a part of the new construction. Concrete slab, curb, gutter, and sidewalk material that contains no hazardous materials, and asphalt concrete material from roadway re-surfacing are two such materials that shall be considered for recycling. The Contractor shall identify recycle opportunities in the response to this RFP.

### SECTION 02456 – PRESTRESSED CONCRETE PILES (NOT REQUIRED FOR THIS PROJECT)

1.6 EXCAVATION, SHEETING, DEWATERING AND BACKFILLING

Delete the first bracketed option.

#### **SECTION 02530 – SANITARY SEWAGE**

1.2.1 Sanitary Sewer Gravity Pipeline

Clay pipe and fittings are not allowed.

1.2.2 Sanitary Sewer Pressure Lines

For pressure lines the following materials are not allowed:

- (1) ABS Composite Plastic piping and Fittings
- (2) ABS Solid-Wall Plastic Piping and Fittings
- (3) Clay piping and fittings

#### **SECTION 02581 – UTILITY POLES**

Do not use this specification section on LANTNAVFACENGCOM projects.

#### **DIVISION 03 – CONCRETE**

### SECTION 03010 – LIGHT REFLECTION NON-OXIDIZING FLOOR FINISH (NOT REQUIRED FOR THIS PROJECT)

Use LANTDIV sample specification section 03010 "Light Reflective Non-Oxidizing Floor Finish" for dry shake type white floor finish.

# SECTION 03520 – LIGHTWEIGHT CONCRETE ROOF INSULATION (NOT REQUIRED FOR THIS PROJECT) $\,$

#### 3.1.1 Minimum Compressive Strength

Do not use less than 9 Mpa or 125 pounds per square inch for minimum compressive strength.

### SECTION 03930 – CONCRETE REHABILATATION (NOT REQUIRED FOR THIS PROJECT)

#### 3.5.2 Testing

Contractor shall test samples of all concrete and grout materials and provide results to the Contracting Officer.

### SECTION 03450 – PLANT-PRECAST ARCHITECTURAL CONCRETE (NOT REQUIRED FOR THIS PROJECT)

#### 1.5.1 PCI Quality Certifications

Utilize the paragraph, which requires PCI Plant Certification or Architectural Precast Association Certification

#### 2.2.9 Reinforcement

Specify hot dipped galvanized reinforcing bars for all exposed reinforcing, projecting steel anchorage members and reinforcing with less than 1 ½" of concrete coverage.

#### **DIVISION 04 – MASONRY**

#### **SECTION 04200 – UNIT MASONRY**

#### 2.1.9 Water-Repellant Admixture

Always require water-repellant admixture for masonry and mortar when CMU or split face CMU are use as an exterior finish.

#### 2.4.13 Cavity Walls

Use vertically adjustable ladder reinforcing for masonry cavity walls.

#### 3.1.2 Horizontal Joint Reinforcing

Provide horizontal joint reinforcing a minimum of every other course and in the first two courses above and below openings.

#### 3.1.3 Control Joints

Provide control joints in exterior masonry in accordance with requirements in 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### 3.15 Expansion Joints

Provide control joints in exterior masonry in accordance with 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### SECTION 04230 REINFORCED MASONRY

#### 2.1.0 Water-Repellant Admixture

Always require water-repellant admixture for masonry and mortar when CMU or split face CMU is used as an exterior finish.

#### 2.4.13 Cavity Walls

Use vertically adjustable ladder reinforcing for masonry cavity walls.

#### 3.1.2 Horizontal Joint Reinforcing

Provide horizontal joint reinforcing a minimum of every other course two courses above and below openings.

#### 3.14 Control Joints

Provide control joints in exterior masonry in accordance with requirements in 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### 3.15 Expansion Joints

Provide control joints in exterior masonry in accordance with 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### 3.5 Damproofing

Use damproofing on all cavity walls with CMU back up.

### SECTION 04250 – GLAZED STRUCTURAL CLAY TILE AND PREFACED CONCRETE MASONRY UNITS (NOT REQUIRED FOR THIS PROJECT)

#### 2.4.13 Cavity Walls

Use vertically adjustable ladder reinforcing for masonry cavity walls.

#### 3.1.2 Horizontal Joint Reinforcing

Provide horizontal joint reinforcing a minimum of every other course and in the first two courses above and below openings.

#### 3.14 Control Joints

Provide control joints in exterior masonry in accordance with requirements in 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### 3.15 Expansion Joints

Provide control joints in exterior masonry in accordance with 01159, "Masonry Wall Crack Control Joints" or National Concrete Masonry Association, which ever is more stringent.

#### **DIVISION 06 – WOODS & PLASTICS**

#### **SECTION 06200 - FINISH CARPENTRY**

2.6.1 Quality Standards (QS)

Only use AWI Premium or Custom grade cabinetwork and casework.

#### **DIVISION 07 – THERMAL & MOISTURE PROTECTION**

#### SECTION 07121 - BUILT-UP SHEET WATERPROOFING

Do not use this specification section on LANTNAVFACENGCOM projects.

### SECTION 07240 – EXTERIOR INSULATION AND FINISH SYSTEM (NOT REQUIRED FOR THIS PROJECT)

#### General

Modify the general guidance at the beginning of the specification section. In the paragraph describing the difference between Class PB and PM Systems make the following change to the class PB paragraph; provide a minimum of 567 gram or 20 ounce reinforcing fabric under the finish system where ever Class PB system is used.

#### 1.4.3 Mock-Up of EIFS

Designate a sample area of the new wall to use as mock-up panel for Contracting Officer approval.

#### 2.5 MECHANICAL FASTENERS

Provide mechanical fasteners to support all EIFS systems.

#### 2.8 BASE COAT

Provide a base coat of not less than 1/8 inch in thickness.

#### SECTION 07216 – LOOSE FILL THERMAL INSULATION

Do not use this specification section on LANTNAVFACENGCOM projects.

#### **SECTION 07290 – JOINT SEALANTS**

#### 2.1.1 Interior Sealant

Use ASTM C920 for interior sealants.

#### **SECTION 07311 - ASPHALT SHINGLES**

#### 1.5.1 Manufacturer's Warranty

Provide materials meeting Bermuda requirements on all LANTNAVFACENGCOM projects.

#### 2.1.1 Shingles

Provide materials meeting Bermuda requirements on all LANTNAVFACENGCOM projects. Always utilize fungus resistant shingles on LANTNAVFACENGCOM projects.

#### 3.3.4 Starter Strip

Provide materials and procedures meeting Bermuda requirements on all LANTNAVFACENGCOM projects.

#### 3.3.5 Shingle Course

Provide materials and procedures meeting Bermuda requirements on all LANTNAVFACENGCOM projects.

#### 3.3.6 Valleys

Provide closed cut or woven valley shingle arrangement.

#### **SECTION 07320 - ROOF TILES**

#### 2.4.5 Wind Locks

Provide wind locks of non-corrosive metal for LANTNAVFACENGCOM projects.

#### 2.4.6 Hurricane Clips

Provide hurricane clips for LANTNAVFACENGCOM projects.

#### SECTION 07410 - METAL ROOF AND WALL PANELS

#### 1.2.3 Wind Uplift

Use ASCE 7 to determine wind loads.

#### 1.5.1 Pre-Roofing Conference

At the end of this paragraph, add the following:

"The Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representative, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 2.1 ROOFING AND SIDING PANELS

Only use concealed fastener systems eliminate exposed fastener systems.

#### 2.1.1.4 Factory Color Finish

- (1) Use 70 percent polyvinylidene flouride resin paint.
- (2) For facilities within 300 feet of the ocean or for industrial facilities require a high build paint system made up of a minimum of .8 mil primer/.8 mil top coat coat/.8 mil clear coat. For facilities located more than 300 feet from the ocean or industrial facilities require a .8 mil primer/.8 mil topcoat paint system.
- (3) Require a factory applied primer to all interior surfaces of metal panels. Require a factory applied primer and topcoat for all interior surfaces of metal panels that are exposed to view after construction is complete.
- (4) Require interior finish equal to the exterior finish when the interior finish is exposed to the weather.

#### 2.1.2.4 Factory Color Finish

- (1) Use 70 percent polyvinylidene flouride resin paint.
- (2) For facilities within 300 feet of the ocean or for industrial facilities require a high build paint system made up of a minimum of .8 mil primer/.8 mil top coat coat/.8 mil clear coat. For facilities located more than 300 feet from the ocean or industrial facilities require a .8 mil primer/.8 mil topcoat paint system.
- (3) Require a factory applied primer to all interior surfaces of metal panels. Require a factory applied primer and topcoat for all interior surfaces of metal panels that are exposed to view after construction is complete.
- (4) Require interior finish equal to the exterior finish when the interior finish is exposed to the weather.

#### 3.5 INFORMATION CARD

Provide photo static paper copy of the roof information card to LANTNAVFACENGCOM.

### SECTION 07511 – BUILT-UP ASPHALT ROOFING (AGGREGATE SURFACE) (NOT REQUIRED FOR THIS PROJECT)

#### GENERAL:

(1) Perimeter fastening of roof system shall comply with FM 1-49.

#### 2.1 ROOFING SYSTEM

When roof insulation is used as part of the roofing system, choose the table option to list the insulation as part of the roofing system and provide a note below the table to indicate that it is specified in Section 07220 "Roof Insulation".

#### 1.3.2 Pre-Roofing System

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 3.5 INFORMATION CARD

Require photostatic paper copy of the roof information card to LANTNAVFACENGCOM.

### SECTION 07512 – BUILT-UP ASPHALT ROOFING (SMOOTH SURFACED) (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section for LANTNAVFACENGCOM projects.

### SECTION 07513 – BUILT-UP ASPHALT ROOFING (MINERAL SURFACED) (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section for LANTNAVFACENGCOM projects.

### SECTION 07531 – CHLOROSULVONATED POLYETHYLENE ROOFING (CSPE) (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL:**

(1) Only use this roofing system as a part of a roof repair or roof extension that presently has a CSPE roof on the existing building.

- (2) Use ½" per foot minimum roof slope.
- (3) Perimeter fastening of roof system shall comply with FM 1-49.

#### 1.3.2 Pre-roofing Conference

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 3.4 INFORMATION CARD

Provide photostatic paper copy of the roof information card.

### SECTION 07532 – POLYISOBUTYLENE (PIB) ROOFING (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification Section on LANTNAVFACENGCOM projects.

### SECTION 07536 – ETHYLENE PROPYLENE DIENE MONOMER (EPDM) (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL:**

- (1) Only use this roofing system as a part of a roof repair or roof extension that presently has an EPDM roof on the existing building.
- (2) Use ½" per foot minimum roof slope.

#### 1.3.3 Wind Uplift

Provide Class I-90 in accordance with FM P7825 and capable of withstanding an uplift pressure of 4.30 kilopascals per square meter or 90 pounds per square foot. Perimeter fastening of roof system shall comply with FM 1-49.

#### 1.3.5 Pre-Roofing Conference

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 3.4 INFORMATION CARD

Provide photostatic paper copy of information card to LANTNAVFACENGCOM.

### SECTION 07541 – POLYVINYL CHORIDE (PVC) Roofing (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

### SECTION 07542 – THERMOPLASTIC ALLOY (TPA) ROOFING (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

### SECTION 07550 – MODIFIED BITUMINOUS MEMBRANE ROOFING (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**:

- (1) Use the LANTNAVFACENGCOM Local Master Guide Specification Section 07550 "Modified Bituminous Membrane Roofing" section located on the LANTDIV home page. Do not use the NFGS section located on the CCB database.
- (1) Use only SBS roofing products from this specification. Do not use APP roofing products.
- (2) Use ½" per foot minimum roof slope.

#### 1.3.4 Wind Uplift

Provide Class I-90 in accordance with FM P7825 and capable of withstanding and uplift pressure of 4.3 kilopascals or 90 pounds per square foot. Perimeter fastening of roof system shall comply with FM-149.

#### 3.4 INFORMATION CARD

Provide photostatic paper copy of the roof information card to LANTNAVFACENGCOM.

### SECTION 07571 – FOAMED ROOFING (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**:

- (1) Only use this roofing system as a part of a roof repair or roof extension that presently has foamed roofing on the existing building.
- (2) All roofing products, including elastomeric top coating for foamed roofing shall be from a single source.

#### 1.4.3 Pre-Roofing Conference

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 3.3 APPLICATION AND EQUIPMENT

Provide over-spray protection of roofing products to prevent damage or coating of personal or government property not required to be coated.

#### 3.5 INFORMATION CARD

Provide photostatic paper copy of the roof information card to LANTNAVFACENGCOM

### SECTION 07572 – COATING FOR FOAMED ROOFING (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**

- (1) Only use this roofing system as a part of a roof repair or roof extension that presently has foamed roofing on the existing building.
- (2) Elastomeric coatings for foamed roofing systems and the PUF (foamed roofing) shall be provided from a single source.

#### 1.3.3 Pre-Roofing Conference

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 2.1 ROOF COATING

Provode type A or B (Silicone) roofing as provided in editor's note.

#### 2.3 MINERAL GRANULES

Provide mineral granules embedded in wet topcoat of coating.

#### 3.2.5 Minimum Dry Film Thickness

Specify application process of the type elastomeric coating required in terms of minimum dry film thickness for base, intermediate and top coats.

#### 3.3 FIELD QUALITY CONTROL

Provide over-spray protection of roofing products to prevent damage or coating of personal or government property not required to be coated.

### SECTION 07580 – ROLL ROOFING (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

#### SECTION 07600 - FLASHING AND SHEET METAL

#### 2.1.6.1 Finish

Use painted finish for galvanized flashing and sheet metal exposed to view on exterior of building.

#### 2.1.10.2 Finish

Use painted finish for aluminum flashing and sheet metal exposed to view on exterior of building.

#### SECTION 07611 - STEEL STANDING SEAM ROOFING

#### 1.6.1 Pre-Roofing Conference

At the end of this paragraph, add the following:

"Contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system."

#### 2.1.3.1 Factory Color Finish

- (1) Use 70 percent polyvinylidene flouride resin for exterior coatings.
- (2) For Facilities within 300 feet of the ocean or industrial facilities provide a high build paint system made up of a minimum of .8 mil primer/.8 mil top coat/.8 mil clear coat. For facilities located more than 300 feet from the ocean or industrial facilities provide a .8 mil primer/.8 mil topcoat paint system.
- (3) Provide a factory applied primer and topcoat for all interior surfaces of metal panels that are exposed to view after construction is complete.

(4) Require interior finish equal to the exterior finish when the interior is exposed to the weather.

#### 3.8 INFORMATION CARD

Provide photostatic paper copy of the roof information card to LANTNAVFACENGCOM.

### SECTION 07612 – ALUMINUM STANDING SEAM ROOFING (NOT REQUIRED FOR THIS PROJECT)

#### GENERAL

(1) Confirm that manufacturers meet uplift requirement before utilizing this specification section.

#### 1.6.1 Pre-Roofing Conference

At the end of this paragraph, add the following:

"The contractor shall provide the following additional information at the pre-roofing conference: Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, roof insulation, and installation of the roofing in accordance with the roof system warranty, the name of the manufacturer's technical representatives, the frequency of the onsite visits, copies of the roof status reports from the technical representatives to roof manufacturer, and pertinent structural details relating to the roofing system"

#### 2.1.1.4 Pre-Finished Coating System

- (1) Use 70 percent polyvinylidene flouride resin for exterior coatings.
- (2) For Facilities within 300 feet of the ocean or industrial facilities provide a high build paint system made up of a minimum of .8 mil primer/.8 mil top coat/.8 mil clear coat. For facilities located more than 300 feet from the ocean or industrial facilities provide a .8 mil primer/.8 mil topcoat paint system.
- (3) Providefactory applied primer and topcoat for all interior surfaces of metal panels that are exposed to view after construction is complete.
- (4) Provide interior finish equal to the exterior finish when the interior to the weather.

#### 3.7 INFORMATION CARD

Provide photostatic paper copy of the roof information card to LANTNAVFACENGCOM.

#### **DIVISION 08 – DOORS & WINDOWS**

#### SECTION 08110 – STEEL DOORS AND FRAMES

#### 2.7 STANDARD STEEL FRAMES

Provide welded door frames for all exterior and masonry walls

#### 2.11 FINISHES

For Facilities within 300 feet of the ocean or industrial facilities provide a G90 galvanized finish for all exterior doors and frames. For facilities located more than 300 feet from the ocean or industrial facilities provide A60 Galvannealled finish. Shop prime all G90 and A60 finishes.

#### SECTION 08120 – ALUMINUM DOORS AND FRAMES

#### 2.3.2.1 Full Glazed Stile and Rail Doors

Use medium and/or wide stile aluminum doors.

#### 2.3.6 Provision for Hardware

The door manufacturer shall supply hardware for the doors and frames.

#### 2.3.7 Finishes

Require Architectural Class I anodic or AAMA 2605 organic coating.

#### SECTION 08161 – ALUMINUM SLIDING GLASS DOORS

#### 2.1.1 Hardware

Sliding door panel shall have a manually operated latch operable by a five-pin tumbler cylinder lock on the outside and thumb-turn on the inside or operable by a five-pin tumbler cylinder lock from either side.

#### 2.1.4 Finish

Provide AA-M10-C22-A31 or AA-M10-C22-A32 anodic finish with a minimum thickness greater than 0.7 mils, or an organic coating in accordance with AAMA 2605.

#### SECTION 08162 – SLIDING FIRE DOORS (NOT REQUIRED FOR THIS PROJECT)

#### 2.3 OPERATION

Provide power operators for sliding fire doors subject to daily usage and required to remain closed. Power operated doors are also required to be used between heated production areas and unheated storage areas where traffic between the two areas.

#### SECTION 08210 - WOOD DOORS

#### 2.1 DOORS

Use hollow metal door frames with wood doors.

#### 2.1.2.1 Exterior Flush Wood Doors

Do not use exterior wood doors on LANTNAVFACENGCOM projects.

#### 2.1.2.2 Interior Flush Doors

- (1) Provide staved lumber wood doors if hardware or attachments will be hung from screws into doors.
- (2) Do not use hollow core interior wood doors.

#### 2.2.1 Door Louvers

Provide metal door louvers when ventilation through wood doors is required.

### SECTION 08331 – ROLLING SERVICE FIREDOORS (NOT REQUIRED FOR THIS PROJECT)

#### 2.1 ROLLING SERVICE DOORS

- (1) Provide electric power with auxiliary chain operation for doors, which are opened daily. All doors shall allow the future installation of electric power operation.
- (2) Mount rolling door on interior side of exterior walls.

#### 2.2.2 Bottom Bar

Provide bottom bar safety device for all electric powered doors.

### SECTION 08342 – STEEL SLIDING HANGAR DOORS (NOT REQUIRED FOR THIS PROJECT)

#### 2.1.9 Personnel Doors

Provide at least one personnel door for every bank of doors.

#### 2.3 OPERATION

Coordinate operation requirements with activity procedures. Use individually operated doors if no other activity guidance is available.

#### SECTION 08361 - SECTIONAL OVERHEAD DOORS

#### 2.6 ELECTRIC OPERATORS

Provide electric power for doors, which are opened daily. All doors shall be designed to allow future installation of electric power operation.

#### 2.6.4 Saftey Device

Provide electric type safety device on the bottom of all sectional overhead doors.

#### SECTION 08370 – VERTICAL LIFT DOORS (NOT REQUIRED FOR THIS PROJECT)

2.1.5 Glazing for doors shall be fully tempered.

#### 2.2 DOOR

Wind load shall be determined by ASCE seven but no less than one kPa 20 psf.

#### 2.3 ELECTRIC OPERATORS

Provide electric power for doors, which are opened daily. All doors shall be designed to allow future installation of electric power operation.

#### 2.6.4 Safety Device

Provide electric type safety device on the bottom of all sectional overhead doors.

#### SECTION 08510 – STEEL WINDOWS (NOT REQUIRED FOR THIS PROJECT)

#### 2.8 Window Finish

Use the shop primed factory finished windows for application of paint to windows.

#### 2.9 Window Types

For installation of new windows in existing openings always use subframes or receiver channels.

#### SECTION 08520 – ALUMINUM WINDOWS (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL NOTE:**

- a. When providing new windows in existing opening, always provide subframe or receiver channel for windows.
- b. Only use residential grade windows in family housing.
- c. Use Architectural Class I anodic finish or AAMA 2605 organic finish.

#### SECTION 08560 - PLASTIC WINDOWS

#### 2.2 Windows

The minimum commercial grade window is C-30 for all window types.

#### 2.4.3.1 Corners and Reinforcement

Welded corners are required.

#### SECTION 08710 - DOOR HARDWARE

#### **GENERAL**

Note: Provide the services of a Certified Hardware Consultant to prepare the hardware schedule.

#### 1.2 Submittals

Keying systems shop drawings are required for approval by architect of record. Prior to the submission of the keying shop drawing, the Contractor, Door Hardware Subcontractor, Architect of Record, Contracting Officer, Using Activity and Base Locksmith shall meet to discuss keying requirements of facility.

#### 2.3.4 Locks and Latches

For Residential Buildings use Series 4000, Operational Grade 2.

#### 2.3.9.2 Lever Handles

Provide lever handles in lieu of knobs.

#### 2.3.12 Closers

Provide closers on doors in or leading to halls, corridors or circulation spaces (except utility spaces); exterior doors and fire rated doors as a minimum.

Provide full size closer covers. Require mechanical stop option in closer of exterior doors when fixed stops are not provided.

#### 2.3.15 Door Protection Plates

Provide door kick plates on all doors in or leading to hall, corridors, or circulation spaces. Provide armor plates on all doors, which will receive cart traffic. Provide mop plates on all doors in rooms which have a moppable floor finish.

#### 2.3.19 Threshold

Provide a non-corrosive metal threshold at all exterior doors. The threshold shall prevent water from entering building but meet handicap access requirements.

#### 2.3.20 Weather-stripping

Provide weather-stripping at all exterior doors.

#### 2.3.22 Rain Drips

Provide rain drips for all exterior doors that open to the outside, in which the door swing area is not covered by and overhang.

### SECTION 08900 – GLAZED CURTAIN WALL (NOT REQUIRED FOR THIS PROJECT)

#### GENERAL

Use curtain wall system with integral thermal break within curtain wall framing members.

#### **DIVISION 09 – FINISHES**

### SECTION 09721 – VINYL COATED FABRIC WALL COVERING (NOT REQUIRED FOR THIS PROJECT)

#### 2.1.1 Wallcovering

Use only Type II or Type III wall coverings.

#### SECTION 09680 - CARPET (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**

Provide carpet that complies with a "Severe" Carpet Wear Classification from Table 1, "Carpet Wear Classification by Facility Type" and a "Wear Level-Severe" on Table II, "Recommended Broadloom Specifications by Carpet Construction"

\*

#### 2.1 PHYSICAL REQUIREMENTS

"c. Pile Fiber

Provide one of the following;

- 1) 100% premium branded, yarn-dyed, Type 6.6 continuous hollow filament nylon
- 2) 100% premium branded, solution-dyed, Type 6 or Type 6.6 continuous hollow filament nylon
- 3) Premium branded, Type 6 nylon staple
- 4) Premium branded, Type 6.6 nylon staple
- 5) Wool blended with Wool Bureau certification
- 6) Wool with Wool Bureau certification
- 7) Polyethylene terephthalate (PET) 25-100 percent recycled fiber"

#### SECTION 09685 – CARPET TILE (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**

Provide carpet that complies with a "Severe" Carpet Wear Classification from Table 1, "Carpet Wear Classification by Facility Type" and a "Severe-Traffic" on Table II, "Recommended Carpet Tile Specifications by Carpet Construction"

\*

#### 2.2 PHYSICAL REQUIREMENTS

"d. Pile Fiber

Provide one of the following;

- 1) 100% premium branded, yarn-dyed, Type 6.6 continuous hollow filament nylon
- 2) 100% premium branded, solution-dyed, Type 6 or Type 6.6 continuous hollow filament nylon
- 3) Premium branded, Type 6 nylon staple
- 4) Premium branded, Type 6.6 nylon staple
- 5) Wool blended with Wool Bureau certification
- 6) Wool with Wool Bureau certification
- 7) Polyethylene terephthalate (PET) 25-100 percent recycled fiber"

#### SECTION 09900 – PAINTS AND COATINGS

PART 3

Paint Tables

- (1) Do not use water-borne, acrylic or modified acrylic primers on ferrous metal, interior or exterior. Use alkyd, corrosion-inhibiting primers for alkyd enamel systems or epoxy primers for epoxy-polyamide systems.
- (2) Do not use acrylic or latex coatings on interior and exterior steel doors and frames. Use a two coat, alkyd, semi-gloss enamel with primer on steel doors and frames.
- (3) Water-borne acrylic or modified acrylic coatings can be used on galvanized metal surfaces.
- (4) Use alkyd wall and ceiling paint in showers and other high humidity room that water contact or condensation accommodation is anticipated on the wall surface.
- (5) Use high performance latex paint (CID-AA-2246) as the normal interior wall paint unless a more durable paint is required; then use alkyd or epoxy paint.

### SECTION 09963 – HIGH-BUILD GLAZE COATINGS (NOT REQUIRED FOR THIS PROJECT)

#### 2.1.1 Filler Material

Do use latex block filler as sealer on exterior concrete or concrete masonry units. Use only solvent base block filler for exterior exposures.

#### 2.1.4 High Build Glaze Coating System Requirements

Specify coatings that are compatible with the any base coat that may be used and the surfaces they are to cover in accordance with High Performance Architectural Coating (HIPPAC), Two component epoxy-polyamide, and single component moisture-curing urethane.

#### 3.4 COATING APPLICATION

Require the use of personnel protection equipment during cleaning and application processes.

#### **DIVISION 10 – SPECIALTIES**

#### SECTION 10153 – TOILET PARTITIONS (NOT REQUIRED FOR THIS PROJECT)

#### USE SECTION 10800, TOILET AND BATH ACCESSORIES

- 2.2 FINISHES (**DISREGARD**)
- (1) Delete Finish No. 1
- (2) All partitions with direct water contact shall be Finish No. 4 or Finish No. 5.

### SECTION 10201 – METAL [WALL] AND [DOOR] LOUVERS (NOT REQUIRED FOR THIS PROJECT)

#### General Note:

- a. Provide flashing system under louver to weep water that passes through the louver back to the exterior of the building.
- b. Provide ACMA Certified Louvers with drainable blades and vertical side channel drainage design.
- c. Provide Architectural Class I anodic finish or AAMA 2605 organic finish.

### SECTION 10652 – OPERABLE PANEL PARTITIONS (NOT REQUIRED FOR THIS PROJECT)

#### 2.1 OPERABLE PANEL PARTITIONS

Provide an operable panel partition with a minimum STC as required by the other walls surrounding the space with the operable partition, but not less than STC 40. Sound path over the ceiling of the operable partition must be the same STC rating at the operable partition.

#### 3.2.2 Visual Test

Add the following sentence to this paragraph, "Contractor shall conduct visual light test and adjust partition to correct light leakage problems."

### SECTION 10655 – ACCORDIAN FOLDING PARTITIONS (NOT REQUIRED FOR THIS PROJECT)

#### 2.3.1 Laboratory Acoustical Requirements

Provide folding partitions with not less than STC 40 rating. Sound path resistance over folding partition must be the same as STC rating for the folding partition.

#### 3.2.2 Visual Test

Add the following sentence to this paragraph, "Contractor shall conduct visual light test and adjust partition to correct light leakage problems."

#### **DIVISION 11 EQUIPMENT**

#### SECTION 11161 – DOOR LEVELERS (NOT REQUIRED FOR THIS PROJECT)

#### 3.3 FIELD TESTS

Include hydraulic leakage for field test of hydraulic dock levelers.

### SECTION 11400 – FOOD SERVICE EQUIPMENT (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**

- (1) Provide a kitchen design arranged and sized to accommodate the requirements of the RFP. List all related equipment to be utilized in the kitchen. Design and provide the following information:
  - a) Manufacturers name
  - b) Manufacturers Model No.
  - c) Description of equipment
  - d) All required option used on equipment.
  - e) Finishes of equipment materials
  - f) Utility requirements
  - g) Air movement (for cooling) requirements
  - h) Summary of equipment operation

### SECTION 11702 – MEDICAL EQUIPMENT, MISCELLANEOUS (NOT REQUIRED FOR THIS PROJECT)

#### GENERAL

- (1) Provide a medical equipment design and arranged and sized to accommodate the requirements of the RFP. List all related equipment to be utilized in the design and provide the following information.
  - a) Manufacturers name
  - b) Manufacturers Model No.
  - c) Description of equipment
  - d) All required option used on equipment.
  - e) Finishes of equipment materials
  - f) Utility requirements
  - g) Data Connections
  - h) Air movement (for cooling) requirements
  - i) Summary of equipment operation

#### SECTION 11744 – DENTAL EQUIPMENT (NOT REQUIRED FOR THIS PROJECT)

#### **GENERAL**

- (1) Provide a dental equipment design and arranged and sized to accommodate the requirements of the RFP. List all related equipment to be utilized in the design and provide the following information.
  - a) Manufacturers name
  - b) Manufacturers Model No.
  - c) Description of equipment
  - d) All required option used on equipment.
  - e) Finishes of equipment materials
  - f) Utility requirements
  - g) Air movement (for cooling) requirements
  - h) Summary of equipment operation

#### **DIVISION 12 FURNISHINGS**

#### **SECTION 12301 – MANUFACTURED VANITIES**

Do not use this specification section on LANTNAVFACENGCOM projects.

#### SECTION 12302 – WARDROBE STORAGE CABINETS (THREE DRAWER)

General: Use this section when BEQ program requirements do not indicate the use of storage closets in sleeping rooms. Use all wood construction.

#### **SECTION 12303 – WARDROBE**

General: Use this section when BEQ program requirements do not require the use of storage closets in sleeping room. Use all wood construction.

#### SECTION 12352 – RESIDENTIAL CASEWORK

#### 2.2.6 Particleboard

Delete all particleboard from cabinetwork except for countertops.

#### 2.5 METAL CABINETS

Delete this cabinet type.

#### DIVISION 13 SPECIAL CONSTRUCTION

#### SECTION 13038 – COLD-STORAGE ROOMS (PREFABRICATED PANEL TYPE) (NOT REQUIRED FOR THIS PROJECT)

General: Require a cold storage room when requirement for refrigeration space exceed the area of 2-three compartment roll-in refrigerators.

Provide air-cooled condensers for refrigeration equipment.

### SECTION 13121 – PREENGINEERED METAL BUILDINGS (NOT REQUIRED FOR THIS PROJECT)

#### 2.1.2 Panels

- a. Roof panels shall be a minimum of 1 ½" high, standing seam type roofs, with 70 percent resin fluoropolymer coating.
- b. For facilities within 300 feet of the ocean or industrial facilities require a high build paint system made up of a minimum of .8 mil primer/.8 mil top coat coat/.8 mil clear coat. For facilities located more than 300 feet from the ocean or industrial facilities require a .8 mil primer/.8 mil topcoat paint system.
- c. Require a factory applied primer to all interior surfaces of metal panels. Require a factory applied primer and topcoat for all interior surfaces of metal panels that are exposed to view after construction is complete.

### SECTION 13281 – ENGINEERING CONTROL OF ASBESTOS CONTAINING MATERIALS

Properly define scope of work. Define work practices, waste handling and disposal criteria to be used on this project.

#### SECTION 13282 – REMOVAL AND DISPOSAL OF LEAD CONTAINING MATERIAL

Properly define scope of work. Define work practices, waste handling and disposal criteria to be used on this project.

# SECTION 13286 – HANDLING OF PCB AND MERCURY IN LIGHTING BALLASTS AND LAMPS

Properly define scope of work. Clearly identify all PCB ballasts and mercury lamps (Environmental Demolition). Define work practices, waste handling and disposal criteria to be used on this project.

# SECTION 13855 – ADDRESSABLE FIRE DETECTION AND ALARM SYSTEMS (NOT REQUIRED FOR THIS PROJECT)

# **GENERAL**

Utilize Specification Section 13855 for the fire alarm system. Specification Section 13855 is a Northern Division regional specification. Edit Section 13855 to replace all references to the "Northern Division" with "Atlantic Division." Non-bracketed items shall not be deleted unless specifically instructed to do so.

# 1.1 REFERENCES

Ensure the design and specification section includes the following:

- (1) Cite 1999 Edition of NFPA 72
- (2) Cite 1999 Edition of NFPA 90A

# 1.3 SUBMITTALS

(1) Add the following to the SD-03 list;

[Piezo electrical mini-horns and single/multiple station smoke detectors, G]

(2) Add the follow to SD-03 requirements for catalog cuts

Annotate descriptive data to show the specific model, type, and size of each item. Data, which describe more than one type of item, shall be clearly marked to indicate which type the Contractor intends to provide. Data sheets shall indicate proper field connections, power requirements and limitations. Submit one original for each item and clear, legible, first-generation photocopies for the remainder of the specified copies. Incomplete or illegible photocopies will not be accepted. Partial submittals will not be accepted.

# (4) SD-07 Certificates

Add the following at the end of this paragraph;

Qualifications of System Technician, G

# 1.6.1 QUALIFICATION OF INSTALLER

- (1) Contractor shall be UL certified for the installation and testing of fire alarm systems. Contractor shall submit proof of UL certification and a list of installer's personnel."
- (2) Installation drawings shop drawings and as-built drawings shall be prepared by, or under the supervision of, a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein, and is currently certified by the National Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level III certification in fire alarm system program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings."

# 1.6.6 Addressable Fire Alarm System Drawings

Include the following requirements for shop drawings:

c. Drawings shall indicate and identify terminal connections made to elevator controller(s), HVAC controller(s), fire pump controller and magnetic door holders. Show wire colorcode, wire counts and device/appliance wiring order. Show candela rating of each visual notification appliance. Floor plans shall be 1-100 metric scale drawings.

# 1.10 LOCKABLE EQUIPMENT

Lockable equipment shall have type locks and keys as directed by the Contracting Officer.

# 2.2.2.2 Sequence of Operations

Operation of a sprinkler control valve tamper switch or fire pump controller remote supervisory contact or freeze protection thermostatic switch shall not cause an alarm, but shall cause operation of common system audible supervisory alarm signal, display of a custom alphanumeric label.

### 2.2.3.1 Batteries

Batteries shall provide power for 60 hours supervisory condition followed by 15 minutes of alarm condition.

# 2.3.1.6 Power

The alarm current draw of the entire fire alarm system shall not exceed 80 percent of the rated output of the system power supply module(s).

### 2.3.5 Smoke Sensors

All smoke detectors shall be photoelectric type.

# 2.3.12 Notification Appliances

Add the following under the description of the notification appliances: "Effective sound levels shall comply with NFPA 72. Provide appliances in addition to those shown if required in order to meet NFPA 72 sound level requirements."

### 2.3.12.2 Alarm Horns

Alarms horns shall be flush mounted and horn circuits shall be three-tone-temporal coded.

# 2.3.12.3 Visual Alarms

Replace the description of the "Visual alarms" with the following: "Flush-mounted assembly of the stroboscopic type suitable for use in an electrically supervised circuit and powered from the notification appliance circuit(s). Appliances shall provide a minimum of 15 candela measured in accordance with UL 1971, but in no case less than the effective intensity required by NFPA 72 for the appliance spacing and location shown. A thermoplastic lens shall protect lamps and labeled "FIRE" in letters at least 12 mm high. Provide visible appliances within 300 mm of each audible appliance and as indicated. Visible appliance may be part of an audio-visual assembly. Where more than two appliances are located in the same room or corridor, provide synchronized operation."

# 2.3.21 Wiring

Wire for low voltage DC circuits shall be No. 14 AWG minimum solid copper conductors. Wire for connection to base telegraphic alarm loop, if provided, shall be No. 10 AWG minimum solid copper conductor. Insulation shall be 75 degree C minimum with nylon jacket. Cable from control panel to master box and to telegraphic loop shall be Type UF if underground or in wet location.

# SECTION 13920 – FIRE PUMP (NOT REQUIRED FOR THIS PROJECT)

### 1.1 REFERENCES

Ensure the design and specification section includes the following;

Cite 1999 Edition of NFPA 20 Cite 1999 Edition of NFPA 70 Cite 1999 Edition of NFPA 72

# 1.3.1 Pump Room

Contractor shall provide an isometric drawing of the fire pump and all associated piping as part of the shop drawings.

# 1.4 SUBMITTALS

# SD-03 Product Data for Catalog Cuts

(1) Annotate descriptive data to show the specific model, type, and size of each item. Data which describe more than one type of item shall be clearly marked to indicate which type the Contractor intends to provide. Data sheets shall indicate proper field connections, power requirements and limitations. Submit one original for each item and clear, legible, first-generation photocopies for the remainder of the specified copies. Incomplete or illegible photocopies will not be accepted. Partial submittals will not be accepted.

# (2) SD-07 Certificates

Add requirement to provide "Qualifications of system technician"

# 1.5.4 Qualifications of Installer

"Installation drawings, shop drawings and as-built drawings shall be prepared by, or under the supervision of, a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein, and is currently certified by the national Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level III certification in special hazard system program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings."

# 1.8 SEQUENCE OF OPERATION

- (1) The pump shall start automatically whenever the pressure in the system is reduced to the pump start pressure and manually when the starter is operated. Pump shall continue to run until shut down manually.
- (2) The pump start pressure shall fully comply with the requirements and recommended practices of NFPA 20. The design build contractor shall determine the actual start pressure.

# 2.2.1 Fire Pumps

Pump and pump capacity shall be determined by the design build contractor, based on the sprinkler system (s) demand, and shall fully comply with the requirements and recommended practices of NFPA 20.

# 2.2.4.2 Electric Motor Driver

Require controller enclosures with legs that are a minimum of 300 mm long.

# 2.3.4.2 Check Valve

Provide flanged clear opening swing check type valves with flanged inspection and access cover plate for sizes 100 mm and larger.

# 3.6.2 Preliminary Tests

Include requirement to hydrostatically test the piping system at 34.45 kPa (gage) above normal system working pressure or 1379 kpa (gage), whichever is greater, for a period of 2 hours in accordance with NFPA 20.

# SECTION 13930 - WET-PIPE FIRE SUPRESSION

# 1.1 REFERENCES

Ensure the design and specification section includes the following:

Cite 1999 Edition of NFPA 13R

# 1.4 SPRINKLER SYSTEM DESIGN

Sprinkler system shall by hydraulically calculated.

## 1.5 SUBMITTALS

# (1) SD-03

For Catalog cuts, add the following requirements:

Annotate descriptive data to show the specific model, type, and size of each item. Data, which describes more than one type of item, shall be clearly marked to indicate which type the Contractor intends to provide. Data sheets shall indicate proper field connections, power requirements and limitations. Submit one original for each item and clear, legible, first-generation photocopies for the remainder of the specified copies. Incomplete or illegible photocopies will not be accepted. Partial submittals will not be accepted.

# (2) SD-07 Certificates

Add requirement to provide "Qualifications of system technician" under

# 1.6.1 Qualifications of Installer

"Installation drawings shop drawings and as-built drawings shall be prepared by, or under the supervision of a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein, and is currently certified by the National Institute or Certification in Engineering Technologies (NICET) as an engineering technician with minimum level III certification in automatic sprinkler program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings."

# 2.2.4 Alarm Valve (**NOT REQUIRED FOR THIS PROJECT**)

The alarm shut-off valve in the piping between the alarm valve and the alarm pressure switch shall be a UL listed electrically supervised quarter-turn valve. Connection of switch shall be under the specification section for the interior fire alarm system.

# SECTION 13935 – DRY-PIPE FIRE SPRINKLER (NOT REQUIRED FOR THIS PROJECT)

### **GENERAL**

Provide dry-pipe sprinkler system in accordance with NFPA 13, the design area requirements of MIL-HDBK-1008C, Table 3, shall be increased by 30%.

### 1.1 REFERENCES

Ensure the design and specification section includes the following:

Cite 1999 Edition of NFPA 13

# 1.3 SPRINKLER SYSTEM DESIGN

Sprinkler system shall be hydraulically calculated.

### 1.4 SUBMITTALS

# (1) SD-03

For catalog cuts add the following:

"Annotate descriptive data to show the specific model, type, and size of each item. Data, which describes more than one type of item, shall be clearly marked to indicate which type the Contractor intends to provide. Data sheets shall indicate proper field connections, power requirements and limitations. Submit one original for each item and clear, legible, first-generation photocopies for the remainder of the specified copies. Incomplete or illegible photocopies will not be accepted. Partial submittals will not be accepted."

# (2) SD-07 Certificates

Add requirement to provide "Qualifications of system technician" under

# 1.5.1 Qualifications of Installer

"Installation drawings, shop drawings and as-built drawings shall be prepared by, or under the supervision of, a qualified technician. Qualified technician shall be an individual who is experienced with the types of work specified herein, and is currently certified by the National Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level III certification in automatic sprinkler program. Contractor shall submit data showing the name and certification of the technician at or prior to submittal of drawings."

# 2.1 ABOVEGROUND PIPING SYSTEMS

- (1) Make changes in piping sizes through tapered reducing pipefitting; bushings will not be permitted
- (2) Conceal piping in areas with suspended ceilings.

# 2.1.1 Sprinkler Piping

- (1) Piping shall be Steel Schedule 40 for sizes less than 200 mm, and Steel Schedule 30 or 40 for sizes 200 mm and larger.
- (2) Side outlet tees using rubber gasketed fittings shall not be permitted. Sprinkler pipe and fittings shall be metal.

# 2.1.2 Sprinkler Heads

- (1) Require nominal 12.7 mm or 13.5 mm orifice standard spray quick-response type sprinkler heads
- (2) Release element of each head shall be of the intermediate temperature rating or higher as suitable for the specific application.
- (3) Require corrosion-resistant sprinkler heads and sprinkler head guards as required by NFPA 13.

# 2.1.4 Dry Pipe Values

The alarm shut-off valve in the piping between the alarm valve and the alarm pressure switch shall be a UL listed electrically supervised quarter-turn valve. Connection of switch shall be under the specification section for the interior fire alarm system.

# 2.1.11 Identification Signs

Permanently affix hydraulic design data nameplates to the riser of each system.

# 2.1.12 Inspector's Test Connection

Inspector's Test Connection shall not discharge to floor drains. The penetration of the exterior wall shall be no greater than 0.61 meter above finished grade.

2.1.14 After this paragraph, add the following new paragraph.

# 2.1.15 Backflow Preventer Test Connection

Provide a Backflow Preventer Test Connection. Provide one valve for each 950 L/m of system demand or fraction thereof. Main drain shall not serve as the backflow preventer test connection.

# DIVISION 14 CONVEYING SYSTEMS

# SECTION 14210 ELECTRIC TRACTION ELEVATORS (**NOT REQUIRED FOR THIS PROJECT**)

### 1.2 SUBMITTAL

All submittal items listed in the guide specification are required for an elevator submittal. The Contracting Officer shall approve the elevator submittal.

# SECTION 14240 HYDRAULIC ELEVATOR

# 1.2 SUBMITTAL

All submittal items listed in the guide specification are required for an elevator submittal. The Contracting Officer shall approve the elevator submittal.

# **DIVISION 15 - MECHANICAL**

# SECTION NFGS- L-15080 – MECHANICAL INSULATION

Use this LANTDIV Master spec section in lieu of the NAVY Master NFGS-15080, "Mechanical Insulation".

# SECTION 15181 – CHILLED, CONDENSER, OR DUAL SERVICE WATER PIPING (NOT REQUIRED FOR THIS PROJECT)

Use this section when chilled and/or hot water systems are greater than 720,000 btuh. For systems 720,000 btuh and less, use Section 15700, "Heating, Ventilating, and Cooling Systems".

# SECTION 15185 – LOW TEMPERATURE WATER [LTW] HEATING SYSTEM (NOT REQUIRED FOR THIS PROJECT)

Use this section when hot water systems are greater than 720,000 btuh. For systems 720,000 btuh and less use "Section Section 15700, "Heating, Ventilating, and Cooling Systems".

# SECTION 15195 – NATURAL GAS AND LIQUID PETROLEUM PIPING (NOT REQUIRED FOR THIS PROJECT)

Use this section when using LPG, or when natural gas piping system is supplying more than a small gas-fired boiler or gas-fired water heater (400,00 btuh or less). For systems supplying appliances rated at 400,000 btuh and less, use "Section Section 15700, "Heating, Ventilating, and Cooling Systems".

# SECTION NFGS- L-15400 – PLUMBING SYSTEMS

Use this LANTDIV Master spec section in lieu of the NAVY Master NFGS-15400, "Plumbing Systems".

# SECTION L-15700 – HEATING, VENTILATING, AND COOLING SYSTEMS (9/99)

This LANTDIV regional specification shall be used for D/B projects in lieu of several NAVFAC specifications. This section shall cover small or medium size HVAC systems as described in the lead note to specifiers. The NAVFAC guide specifications that this section shall be used in place of are:

Section 15181, "HVAC Water", Section 15182, "Refrigerant Piping", Section 15183 (HVAC Steam Units), Section 15184 (HVAC "Hi-temp" Water), Section 15185 (HVAC "Low-temp" Water) Section 15601 (HVAC Refrigeration), Section 15720 (Air Handling) Section 15730 (Unitary A/C), Section 15760 (Terminal units), and Section 15810 (Ductwork)

# 2.2 EQUIPMENT

At the end of this paragraph, insert the following paragraph:

\*

NOTE: The following requirements for HVAC equipment corrosion protection is recommended for coastal installations within 5 miles (8 kilometers) of sea water or brackish water.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# 2.3 CORROSION PROTECTION

Provide either of the two following special finishes on the interior and the exterior metal surfaces of HVAC equipment exposed to the weather, including air handling units, all coil surfaces, equipment casings, air-cooled water chiller coils, heat pumps, and air conditioning units. Also requiring the special finishes are all coil surfaces and interior equipment surfaces belonging to the first HVAC equipment in the supply ductwork system that is subjected to outside supply air.

Finishes shall be applied at the the premises of finish manufacturer or his authorized applicator, or at the premises of the HVAC equipment manufacturer. Provide finishes in colors grey, or aluminum, or ivory. All components of the special finish systems, including primers and intermediate coats, shall be applied by immersion dip-coating or spray-coating.

If special finishes are applied at the finish manufacturer's (or his authorized applicator's) premises, the equipment to be finished shall be transported to and from the finish manufacturer's premises by the Contractor and the finish manufacturer shall be responsible for necessary disassembly of the HVAC equipment and re-assembly of final corrosion-protected equipment.

# 2.3.1 Polyelastomer Finish

# 2.3.1.1 Heat Exchanger Coil (Including Evaporator Coil)Surfaces

- a. Acrylic Polymer Primer: 0.025 mm minimum dry film thickness.
- b. Polyelastomer, 3 coats, 0.050 mm minimum dry film thickness.

# 2.3.1.2 Mild Steel and Factory Primed Surfaces

a. Polyelastomer Resin: 3 coats, 0.100 mm to 0.150 mm minimum dry film thickness.

# 2.3.1.3 Galvanized Surfaces

a. Polyelastomer Resin: 3 coats, 0.038 mm minimum dry film thickness

### 2.3.1.4 Aluminum Surfaces

a. Polyelastomer Resin: 3 coats, 0.038 mm minimum dry film thickness

## 2.3.2 Phenolic Finish

Provide a resin base thermosetting phenolic finish.

# 2.3.2.1 Heat Exchanger Coil (Including Evaporator Coil) Surfaces

a. Apply phenolic finish to the entire coil. Provide a minimum of two coats. Total minimum dry film thickness shall be 0.075 mm.

# 2.3.2.2 Mild Steel and Factory Primed Surfaces

- a. Acid Etch Wash Primer: 1 coat, 0.013 mm to 0.018mm minimum dry film thickness.
- b. Air Dry Phenolic Coating: 3 coats, 0.100 mm to 0.150mm minimum dry film thickness.

## 2.3.2.3 Galvanized Surfaces

a. Air Dry Phenolic Coating: 2 coats, 0.38mm minimum dry film thickness.

# 2.3.2.4 Aluminum Surfaces

a. Air Dry Phenolic Coating: 2 coats, 0.38mm minimum dry film thickness."

# **2.4.7** Diffusers, Registers, and Grilles (NOT REQUIRED FOR THIS PROJECT)

Do not provide each diffuser and register with factory-fabricated, group-operated, adjustable, opposed-blade, air-volume-control dampers, key or screwdriver operated from the face of unit.

**DIVISION 16 - ELECTRICAL** 

SECTION 16060 – GROUNDING AND BONDING (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16230 – DIESEL-ELECTRIC GENERATORS (DESIGN 1) 2,501 KW OR LARGER-PRIME DUTY (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16231 – DIESEL-ELECTRIC GENERATORS (DESIGN 2) 2,501 KW OR LARGER – PRIME DUTY (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16232 – STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 3) 301 TO 1,000 KW (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16233 – STANDBY DIESEL-ELECTRIC GENERATORS (DESIGN 4) 1,001 KW OR LARGER (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16234 – DIESEL ENGINE-GENERATOR SETS – PRIME AND STANDBY – 10 TO 500 KW (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16236 – MOTOR-GENERATOR SETS, 400 HERTZ (HZ) (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

SECTION 16261 – VARIABLE FREQUENCY DRIVE SYSTEMS UNDER 600 VOLTS (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

Use Section 16261, "VARIABLE FREQUENCY DRIVE SYSTEMS UNDER 600 VOLTS" available on the LANTNAVFACENGCOM Homepage.

SECTION 16302 – UNDERGROUND TRANSMISSION AND DISTRIBUTION (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

Use Section 16303, "Underground Electrical Work" available on the LANTNAVFACENGCOM homepage.

# SECTION 16402 – INTERIOR DISTRIBUTION SYSTEM (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

Use Section 16402, Interior "Distribution System" available on the LANTNAVFACENGCOM Homepage.

2.9.6 Nonmetallic Sheathed Cable

Delete this paragraph.

2.9.8 Metal-Clad Cable

Delete this paragraph.

2.9.9 Armored Cable

Delete this paragraph.

2.9.11 Flat Conductor Cable

Delete this paragraph.

3.1.5.11 Metal Clad Cable

Delete this paragraph.

3.1.5.12 Armored Cable

Delete this paragraph.

3.1.5.13 Flat Conductor Cable

Delete this paragraph.

# SECTION 16410 – AUTOMTIC TRANSFER [AND BYPASS/ISOLATION] SWITCHES (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

Use Section 16410, "Automatic Transfer Switches" available on the LANTNAVFACENGCOM homepage.

# SECTION 16520 – EXTERIOR LIGHTING

(NOT REQUIRED FOR THIS PROJECT)

Do not use wood poles for lighting on LANTNAVFACENGCOM projects.

# SECTION 16720 – ADMINISTRATIVE TELEPHONE EQUIPMENT, INSIDE PLANT (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

# SECTION 16782 – [MASTER] [COMMUNITY] ANTENNA TELEVISION SYSTEM (NOT REQUIRED FOR THIS PROJECT)

Do not use this specification section on LANTNAVFACENGCOM projects.

Use Section 16783, "Community Antenna Television (CATV) System" available on the LANTNAVFACENGCOM homepage.

# SECTION 16402 INTERIOR DISTRIBUTION SYSTEM

# 2.2.9 Liquid Tight Flexible Non-Metallic Conduit

Delete this paragraph.

# 2.3 Surface Raceway

Delete this paragrah.

# 2.8.1 Conductors

Delete references to aluminum.

# 2.8.1.2 Alumininum Conductors

Delete this paragraph.

# 2.8.11 Flat Conductor Cable

Delete this paragraph.

# 3.1.5 Wiring Methods

Delete references to rigid non-metallic conduit.

# 3.1.6.6 Telephone and Signal System Conduits

Delete this paragraph.

# 3.1.6.7 CATV Distribution System Conduits

Delete this paragraph.

# 3.1.14.1 Splices of Aluminum Conductors

Delete this paragraph.

# 3.1.15 Terminating Aluminum Conductors

Delete this paragraph.

# SECTION 16510 INTERIOR LIGHTING

# 1.4 Submittals

Delete SD-04 Samples Delete SD-10 Operation & Maintenance Data

# 2.1.10 Electromagnetic Interference Filters

Delete this paragraph.

# SECTION 16783 COMMUNITY ANTENNA TELEVISION (CATV) SYSTEMS

# 1.3.4 Cable

Delete references to trunk and feeder cables.

# 1.4 System Description

Delete references to amplifiers, trunk or feeder cables.

# 1.4.5 System Performance

Delete this paragraph.

# 1.6 Quality Assurance

Delete this paragraph.

# 2.2 Headend Equipment

Delete this paragraph.

# 2.3.1 Distribution Amplifiers

Delete this paragraph.

# ATTACHMENT 6 CONTACT LIST

# Slocum Village/ Hancock Village – Housing Replacement Project Cherry Point, Havelock, NC CONTACT LIST 17 May 2001

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George Broadstreet – Operations

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Carl Stone - Supervisor Engineering Tech

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Earl Brown – Maintenance MCAS-Cherry Point, NC Office: 252-466-4128

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Van Nguyen - Storm water Management/

**Erosion Control** 

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# Larry Leland

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Bob Dupuis – CP&L

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Havelock, NC 28532

252-444-5100

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Department of Environment and Natural

Resources (DENR)

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Washington, NC 27889

252-946-6481 fax 252-946-9215 bill.moore@ncmail.net

# ATTACHMENT 7 DRAWINGS

# MARINE CORPS AIR STATION CHERRY POINT, NORTH CAROLINA

# SLOCUM VILLAGE FAMILY HOUSING PHASE I

CONSTRUCTION CONTRACT NO.: N62470-01-R-1055

NAVFAC SPECIFICATION NO.: 05-01-1055

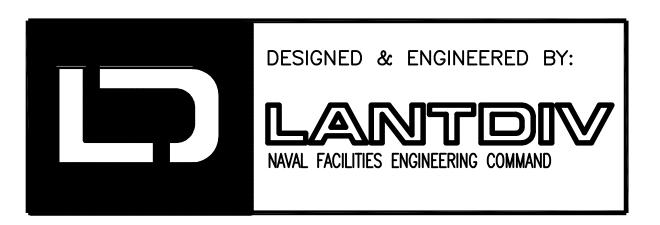
APPROPRIATION: HSG PROJECT NO.: H332

JUNE 21, 2001



ARCHITECTS & ENGINEERS:

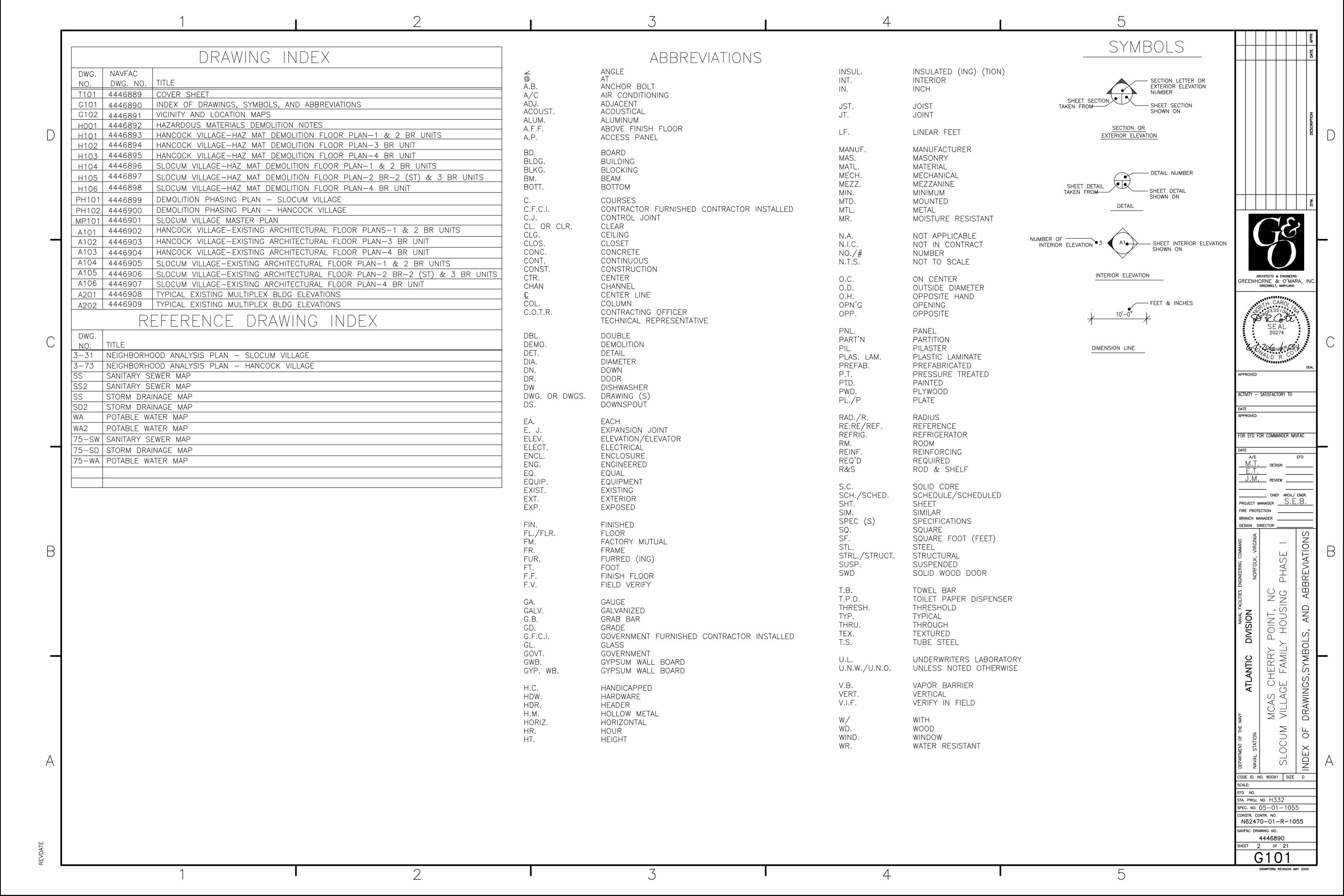
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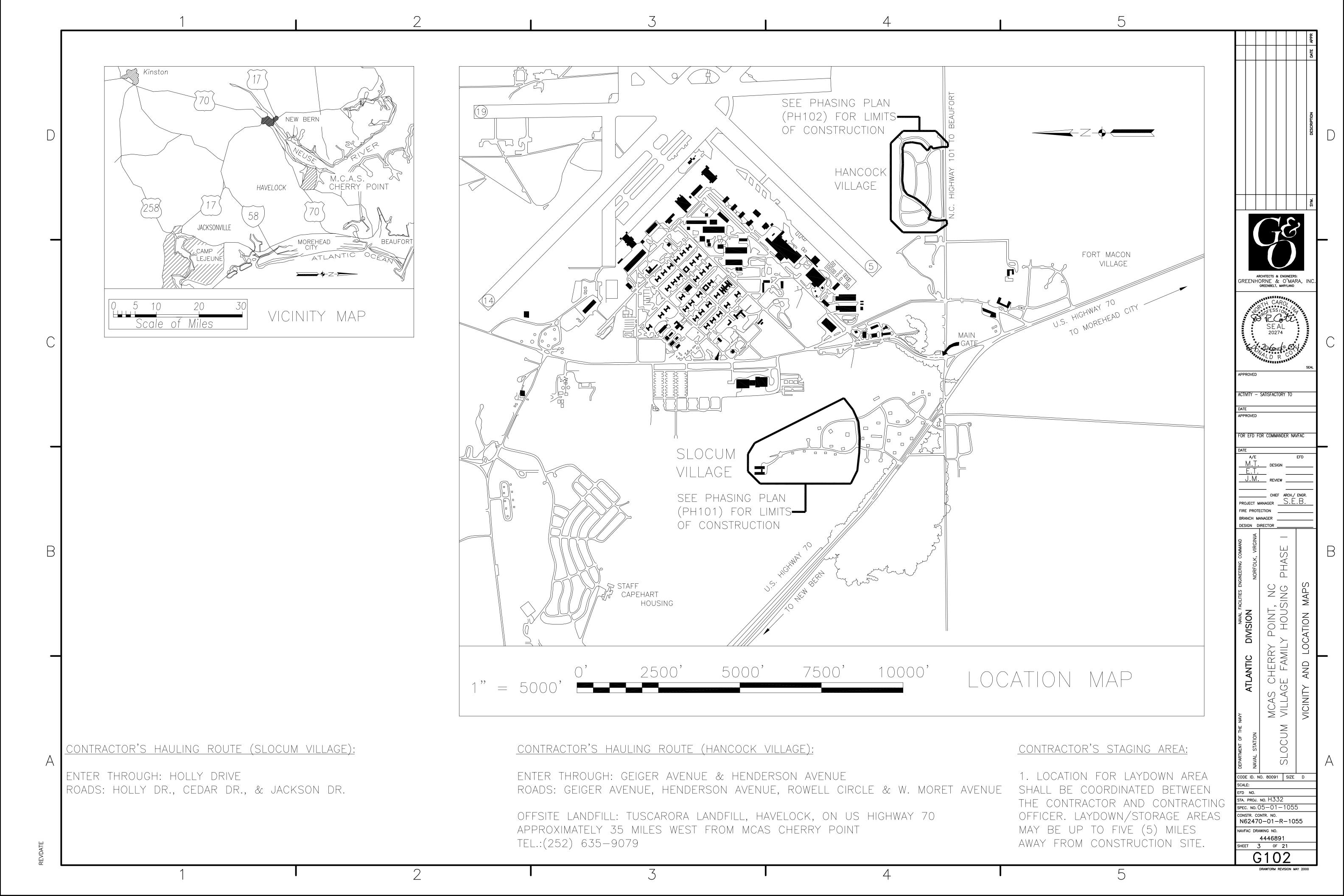


# Department of the Navy Atlantic Division

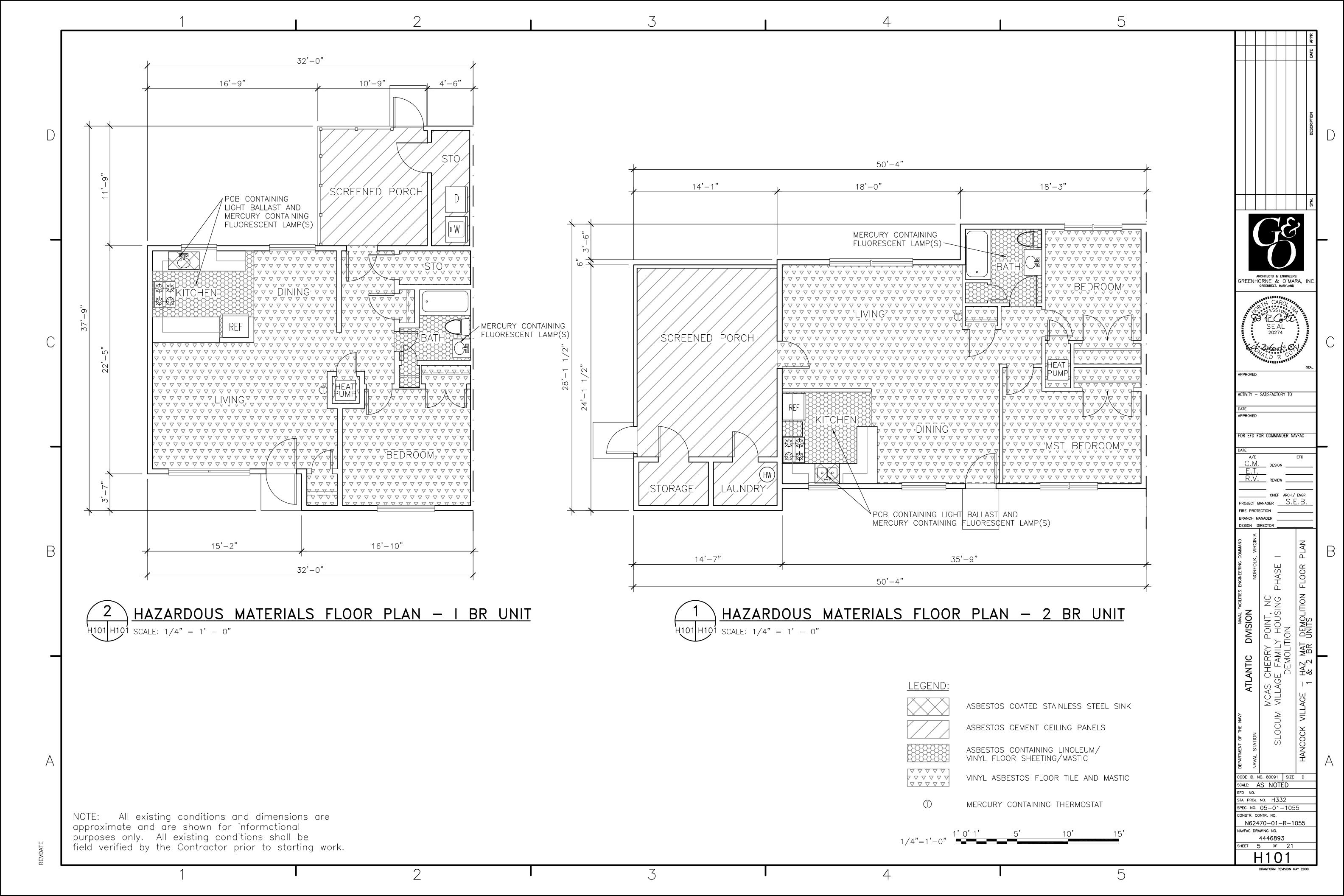
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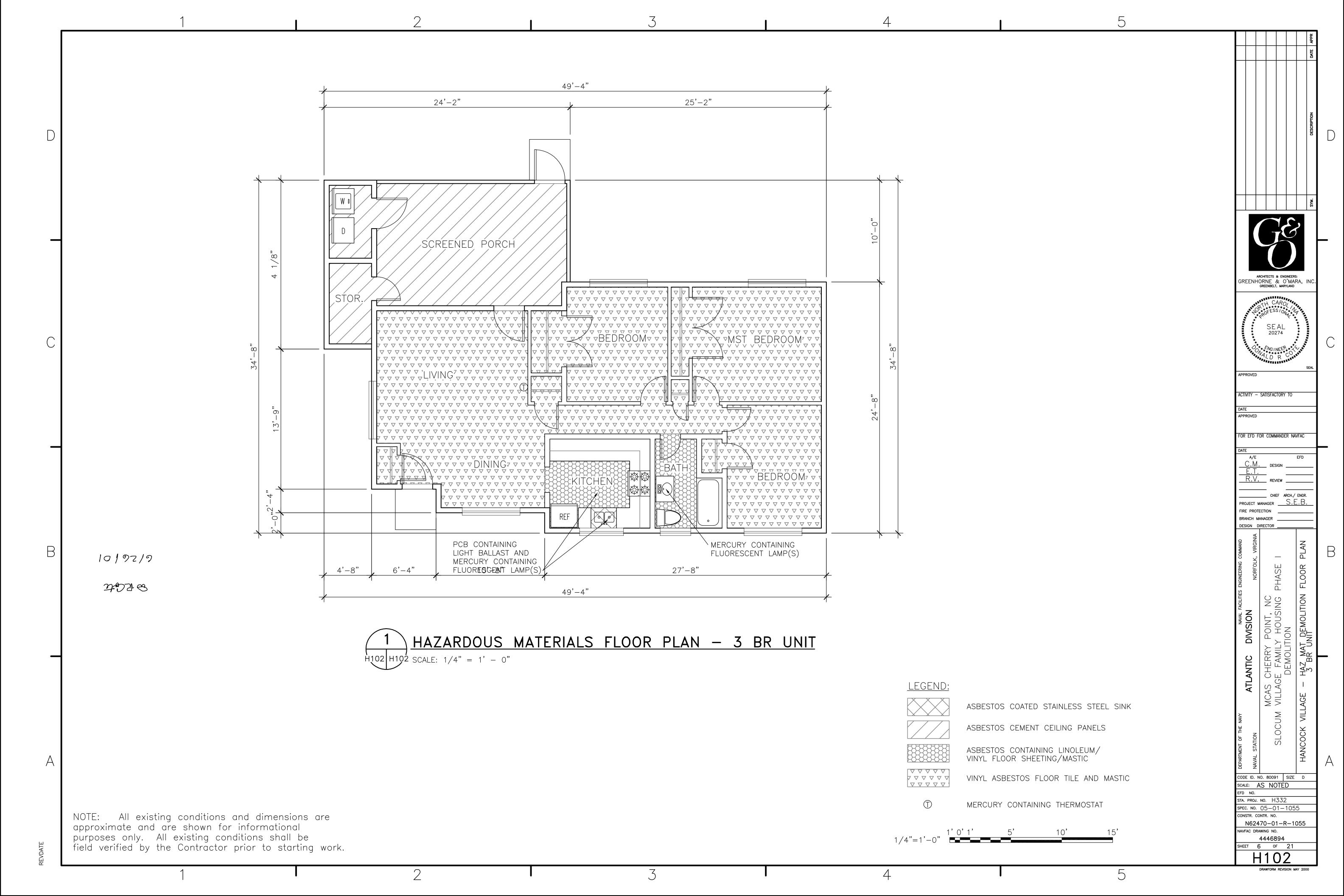
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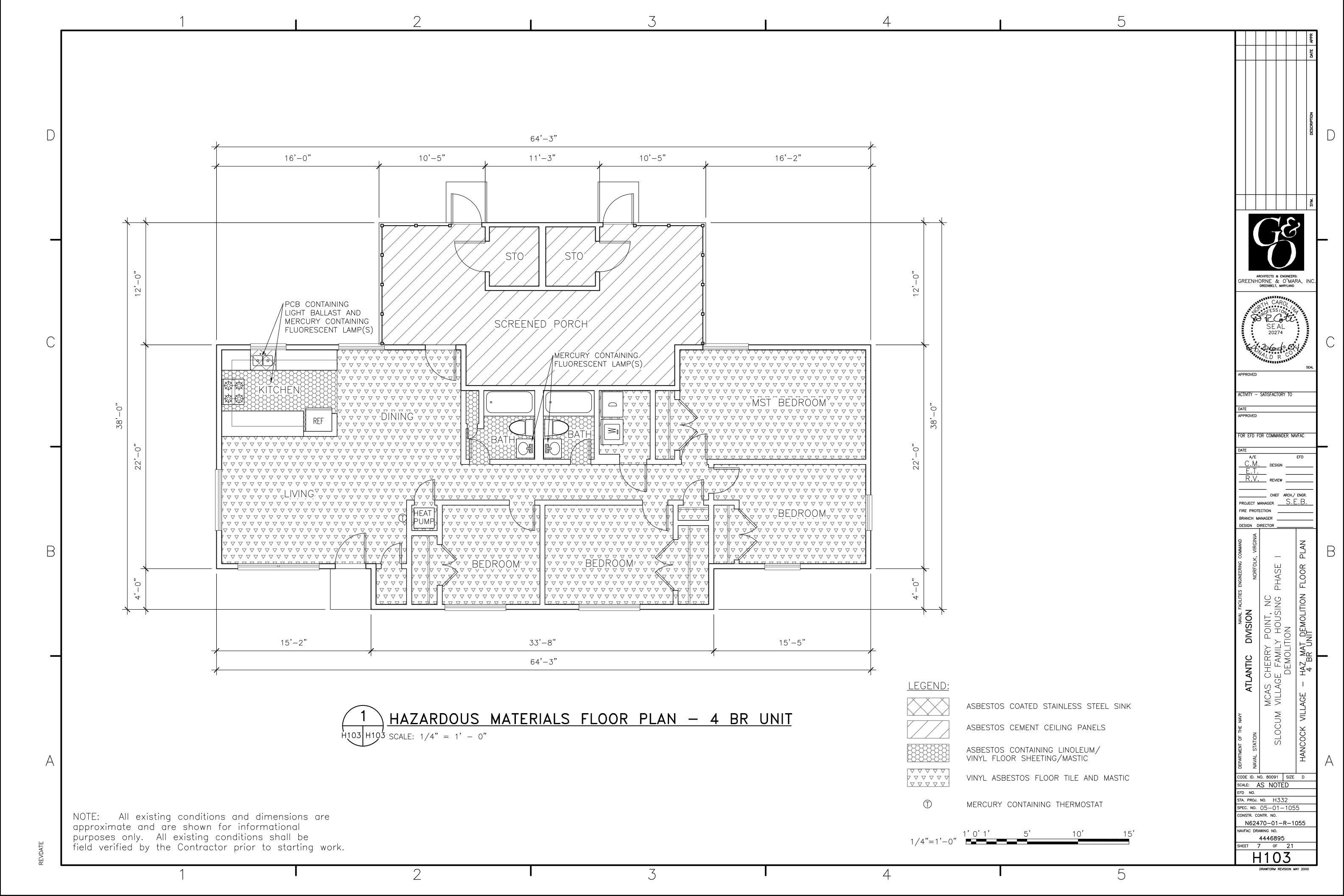


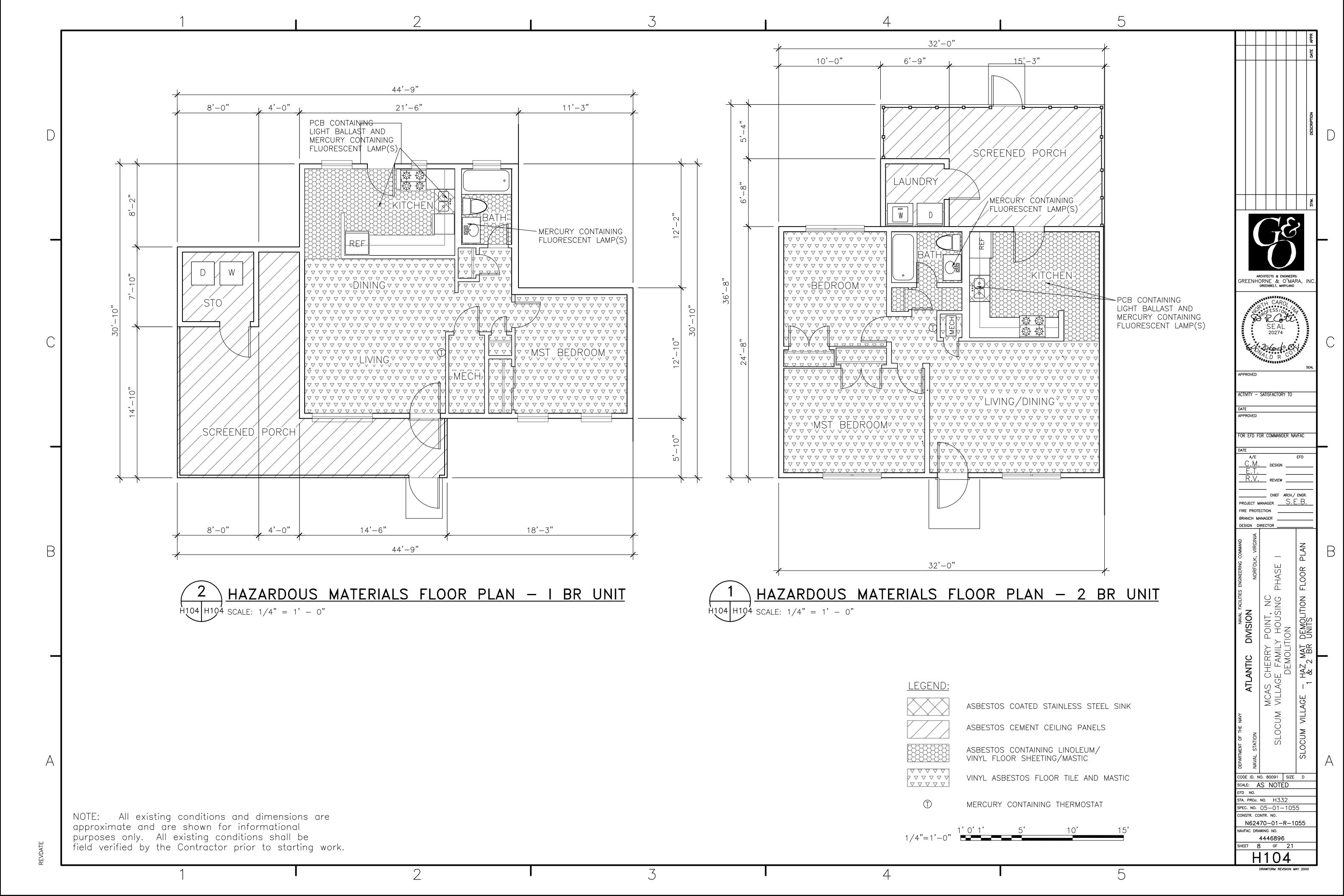


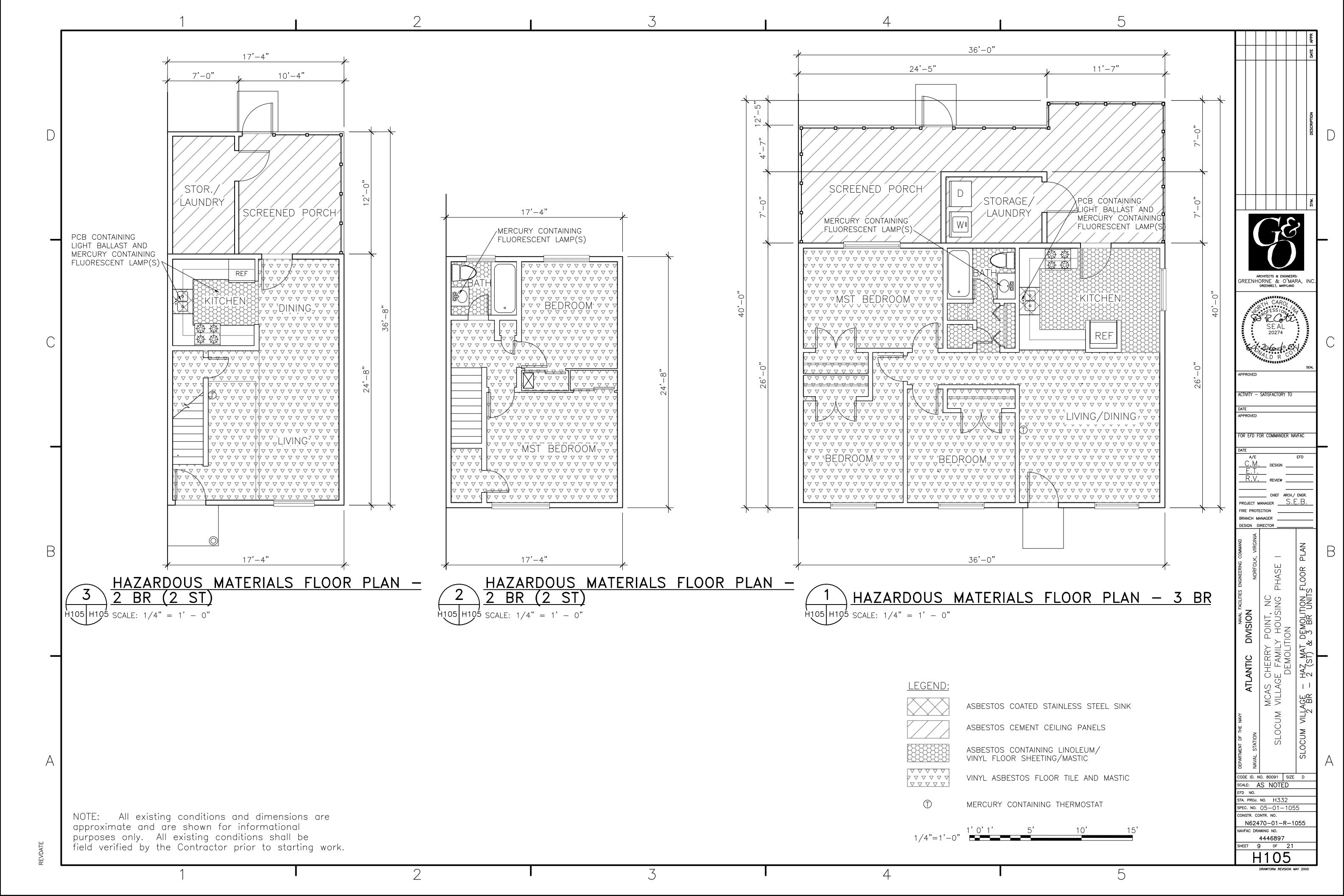


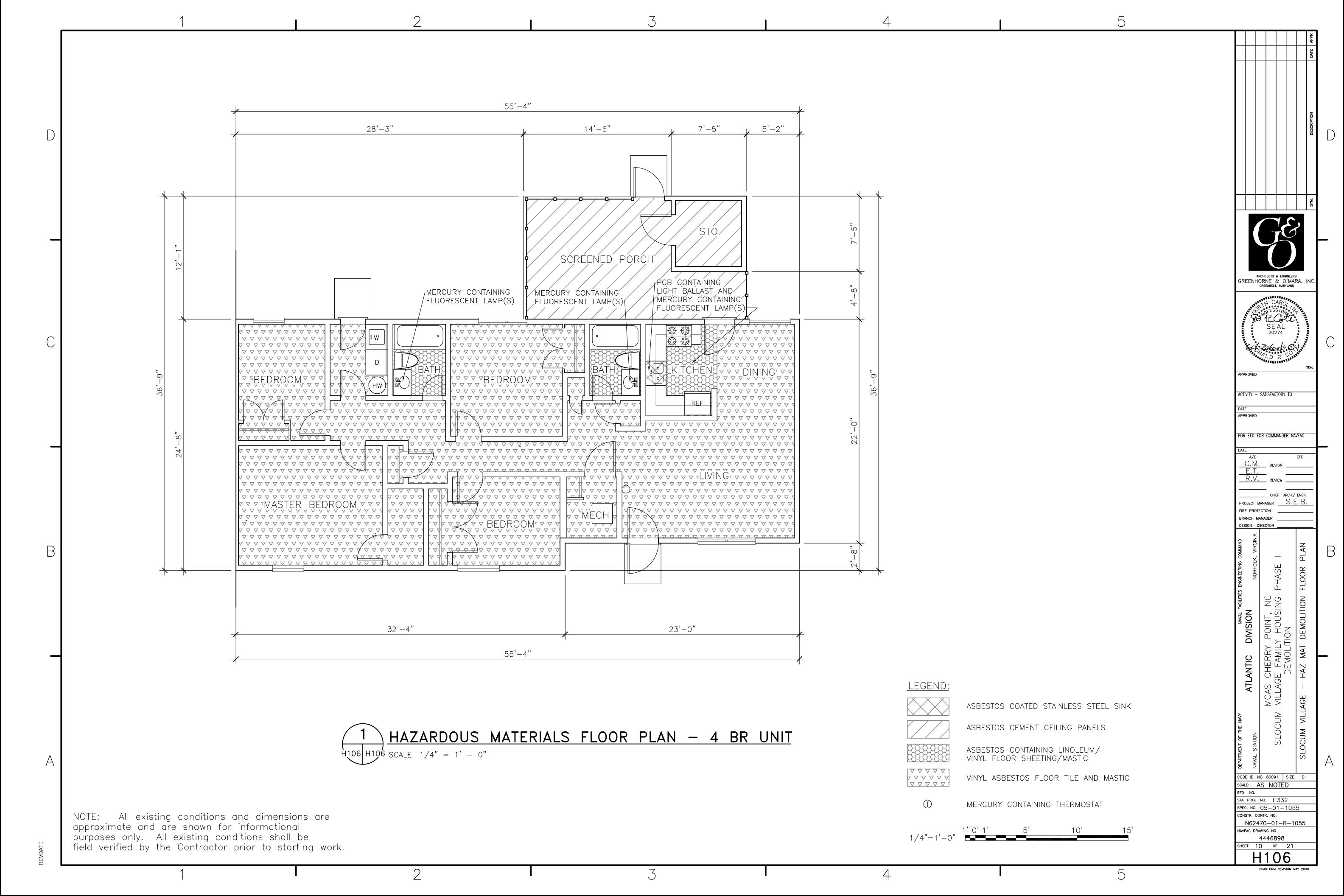


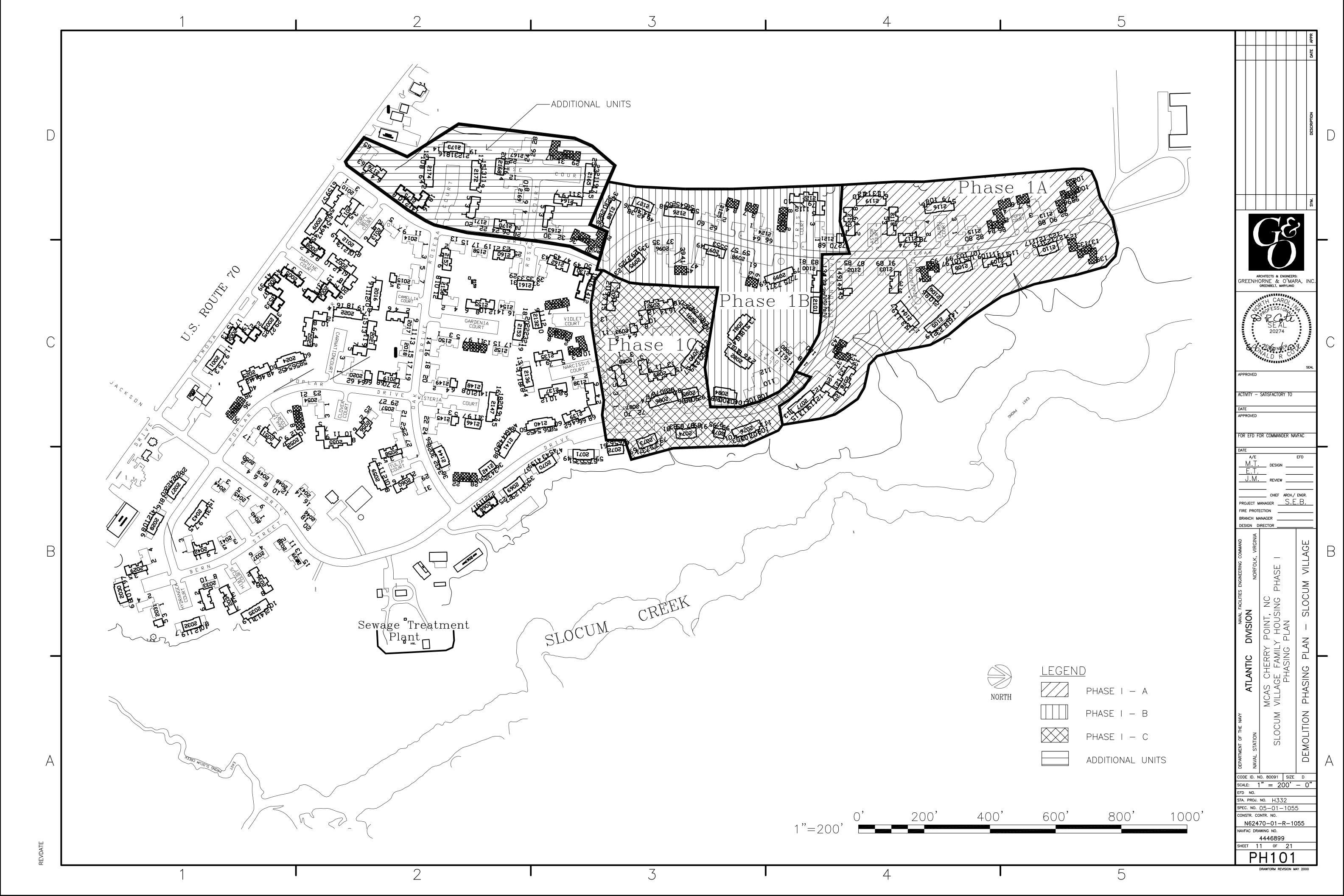


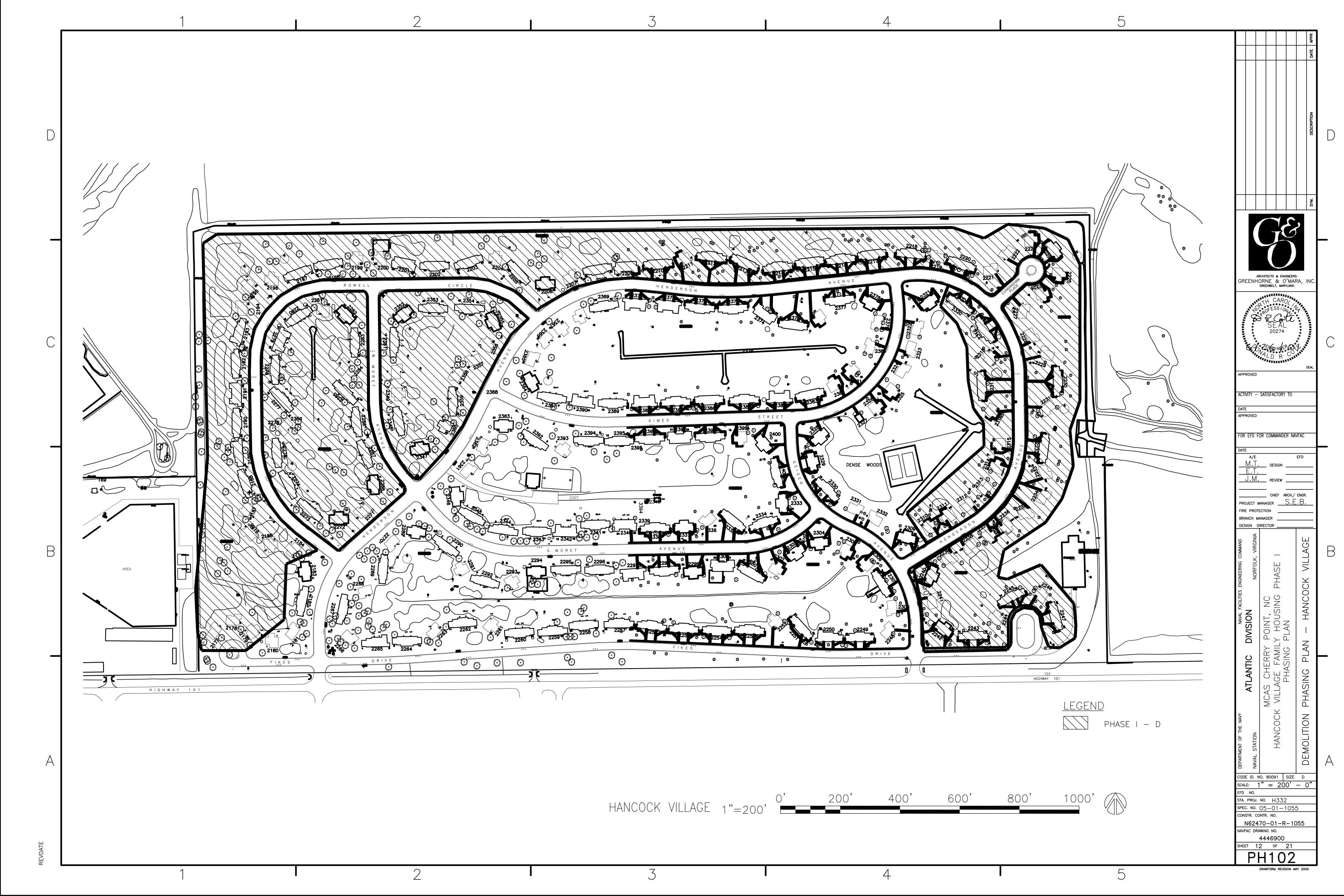


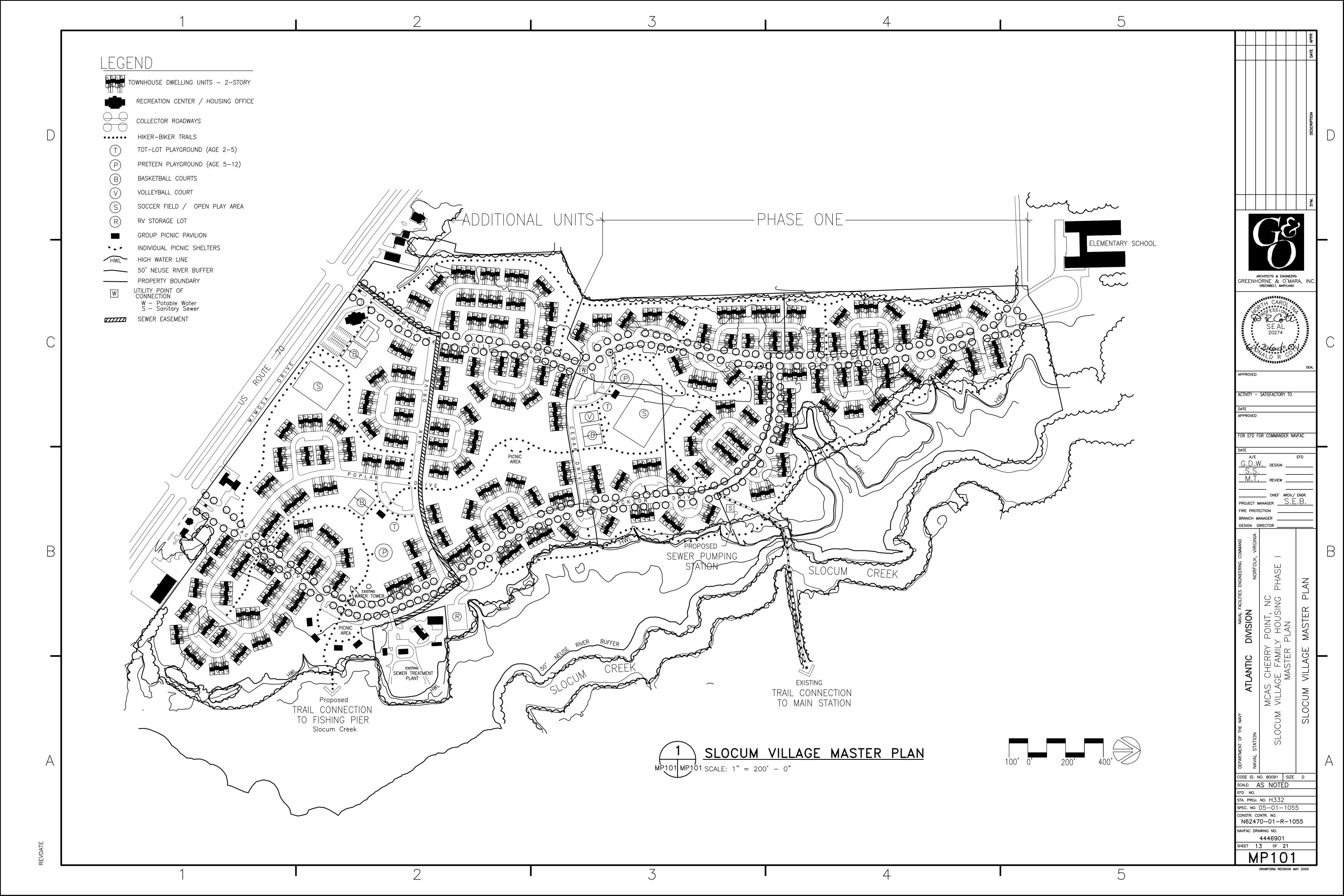


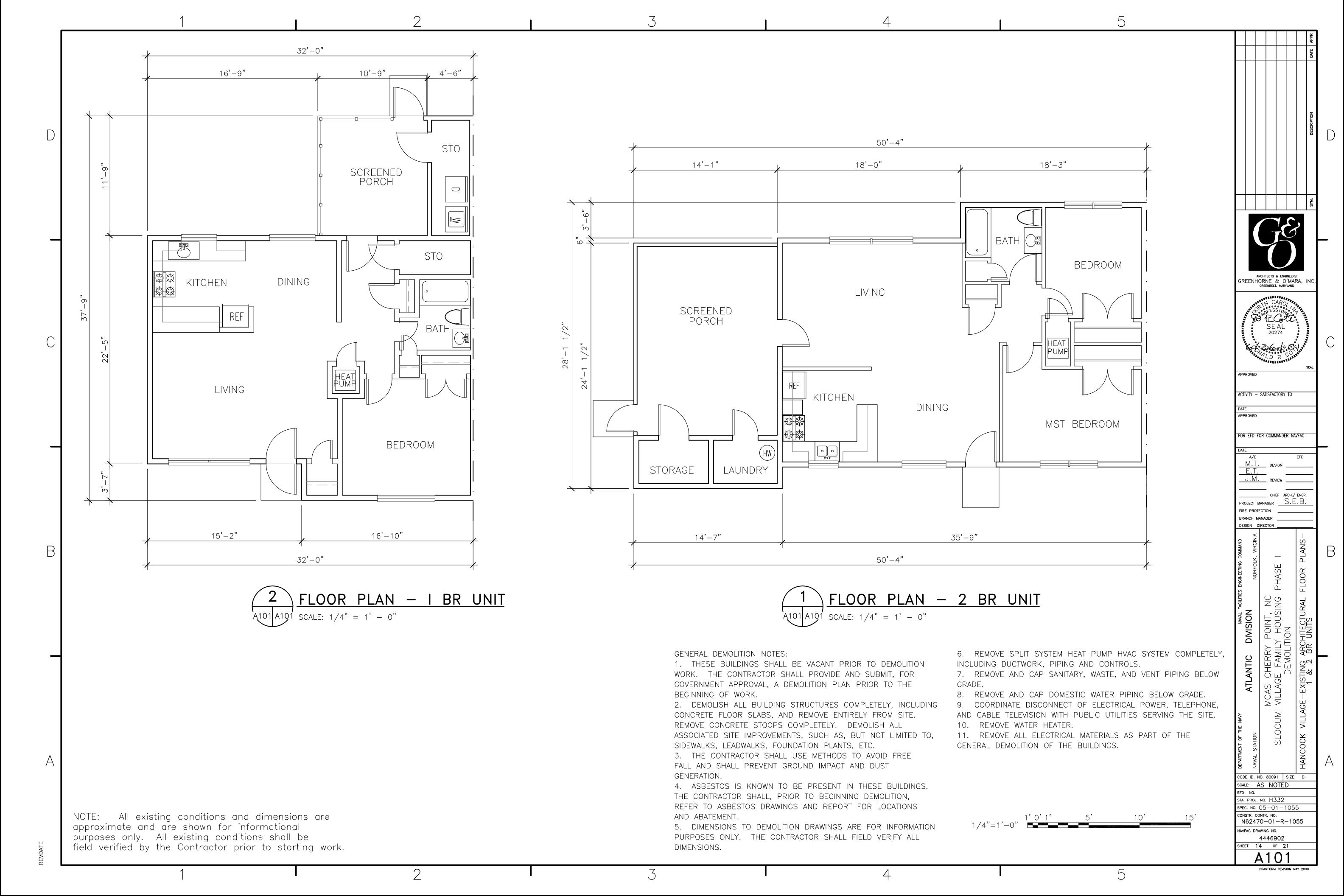


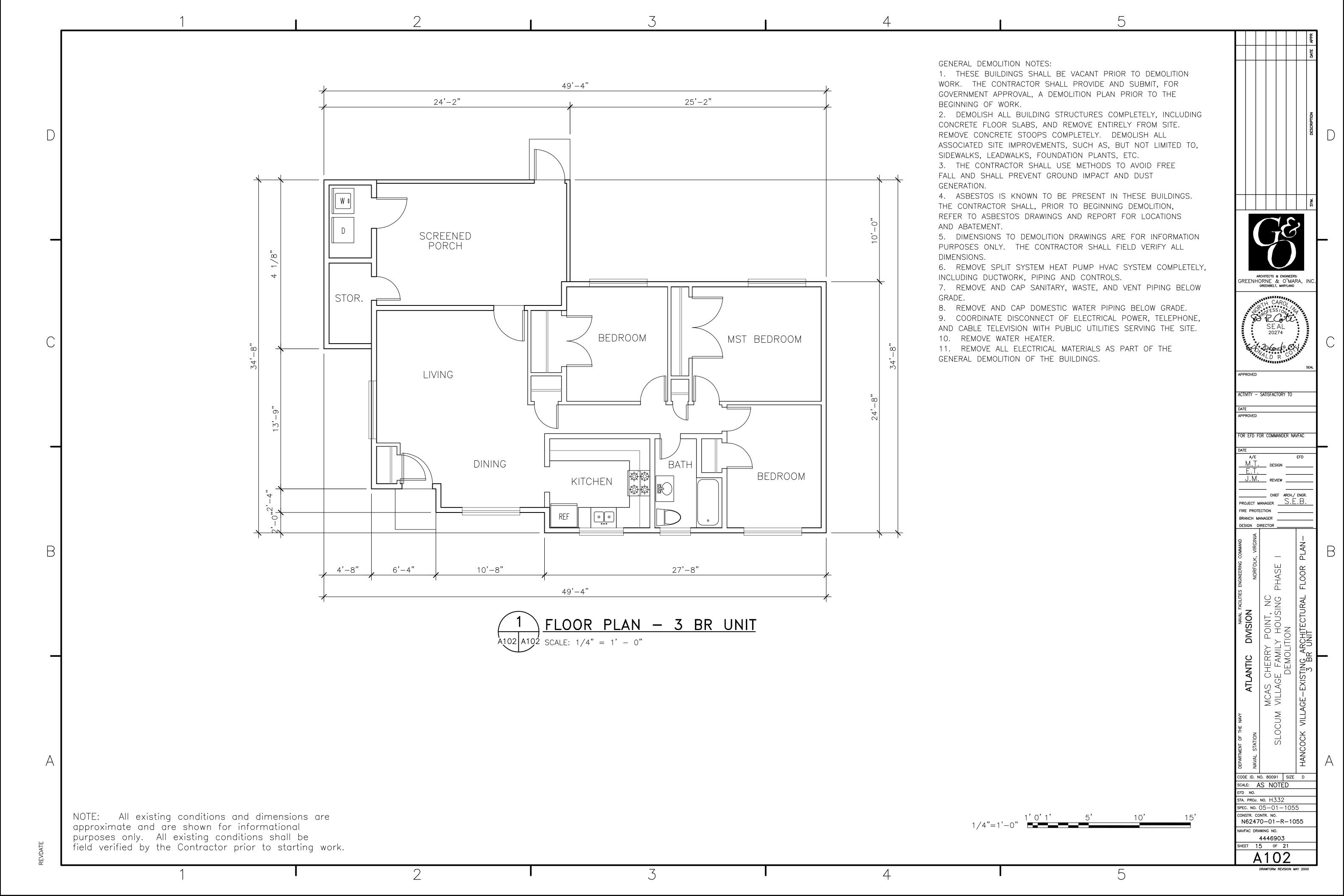


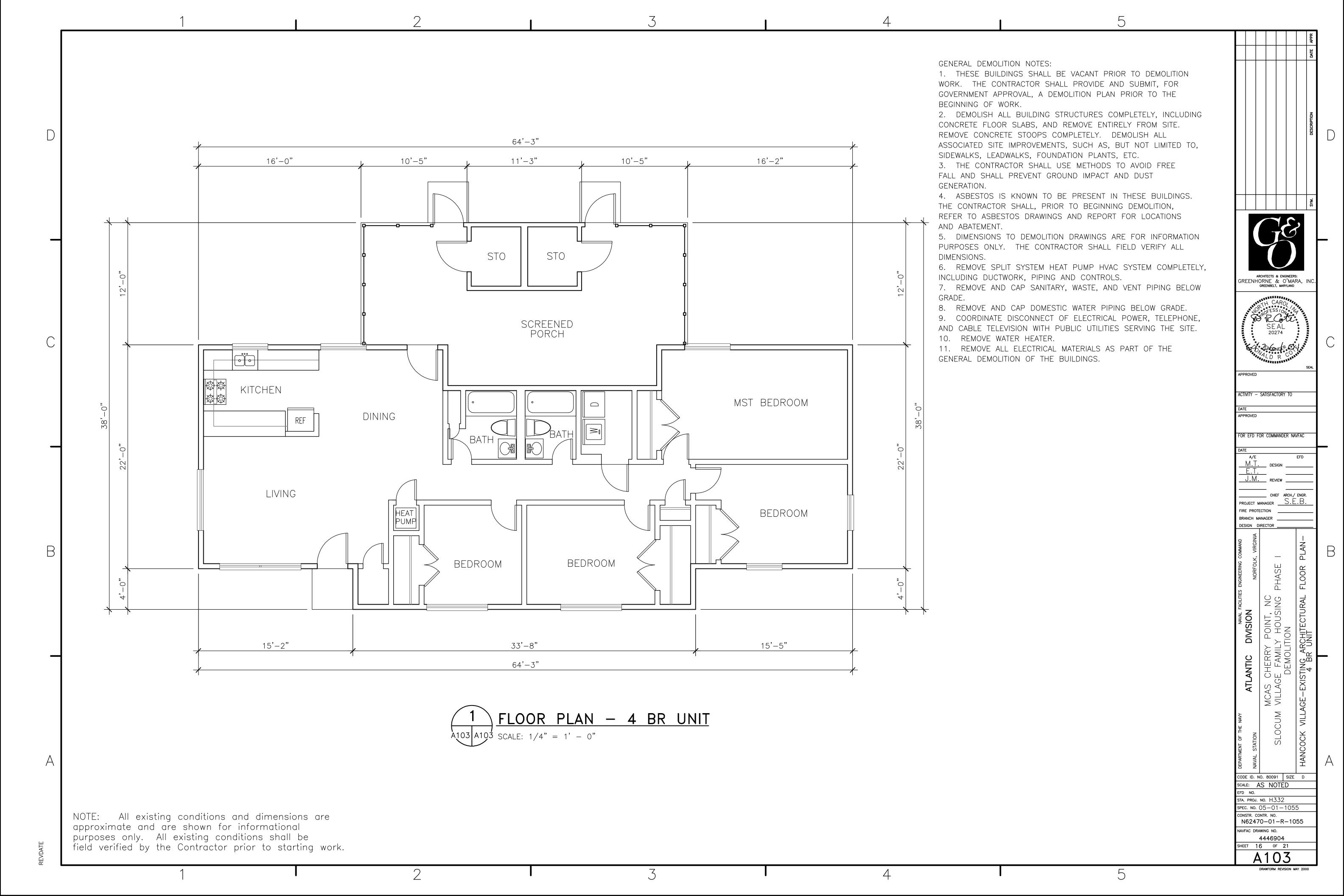


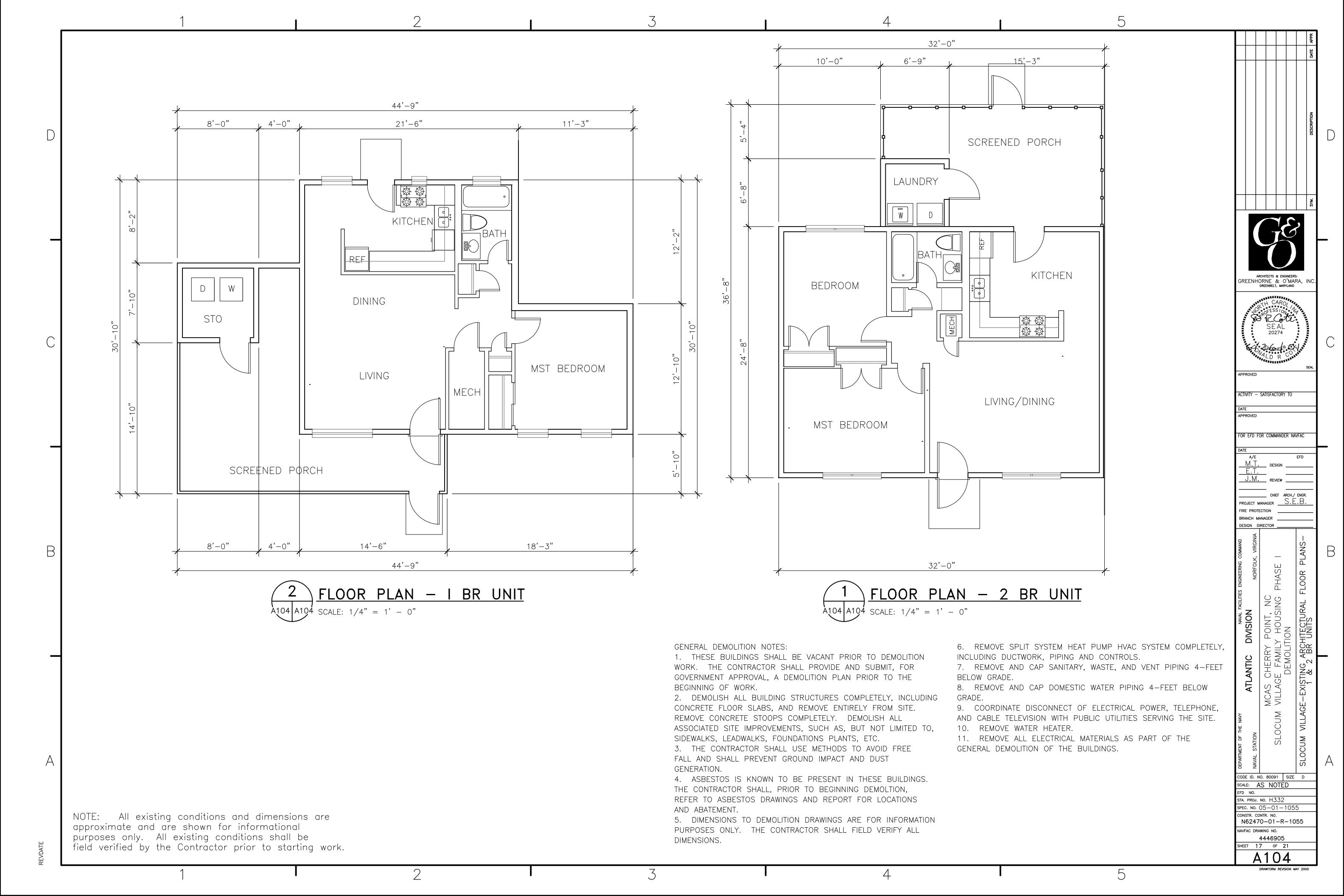


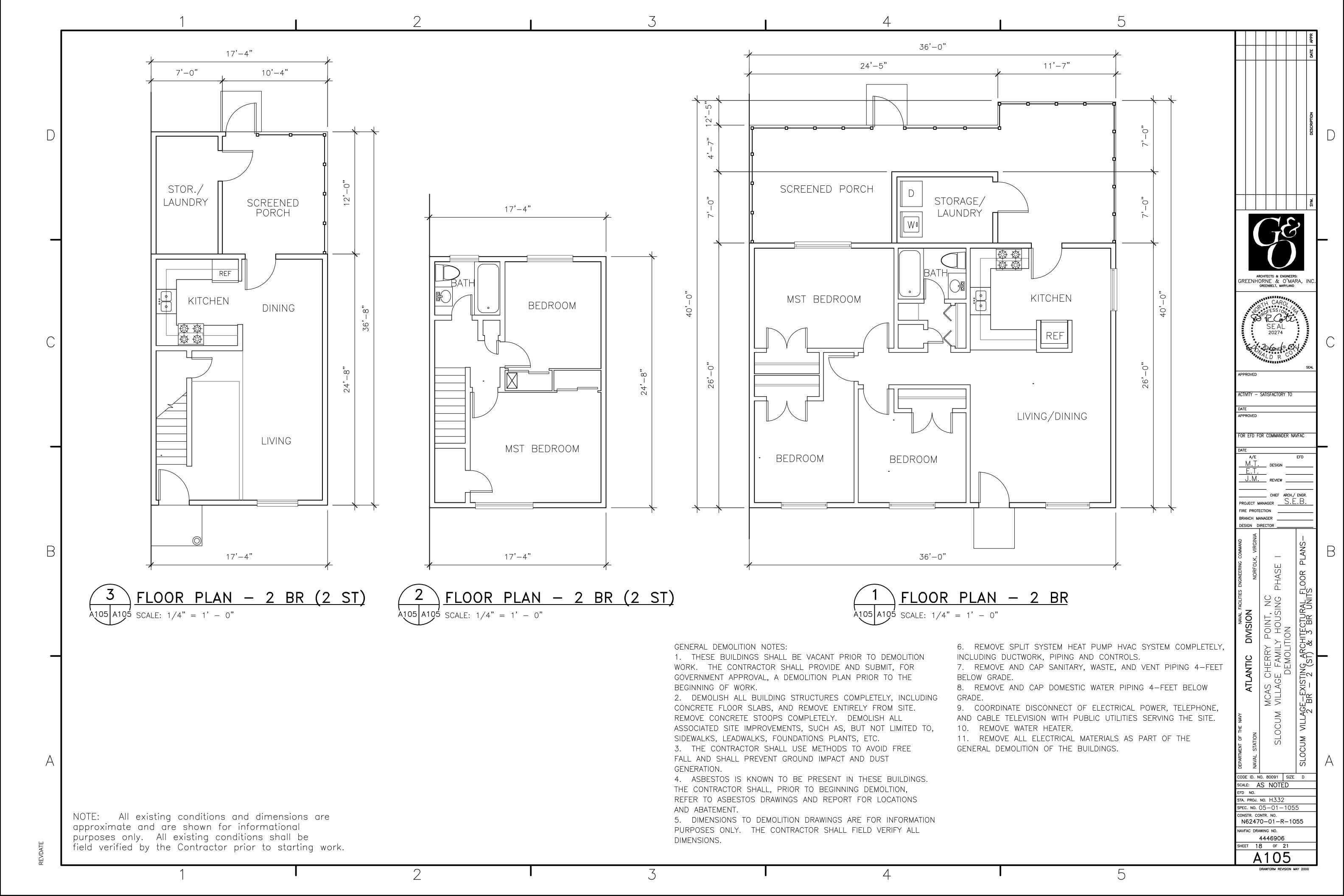


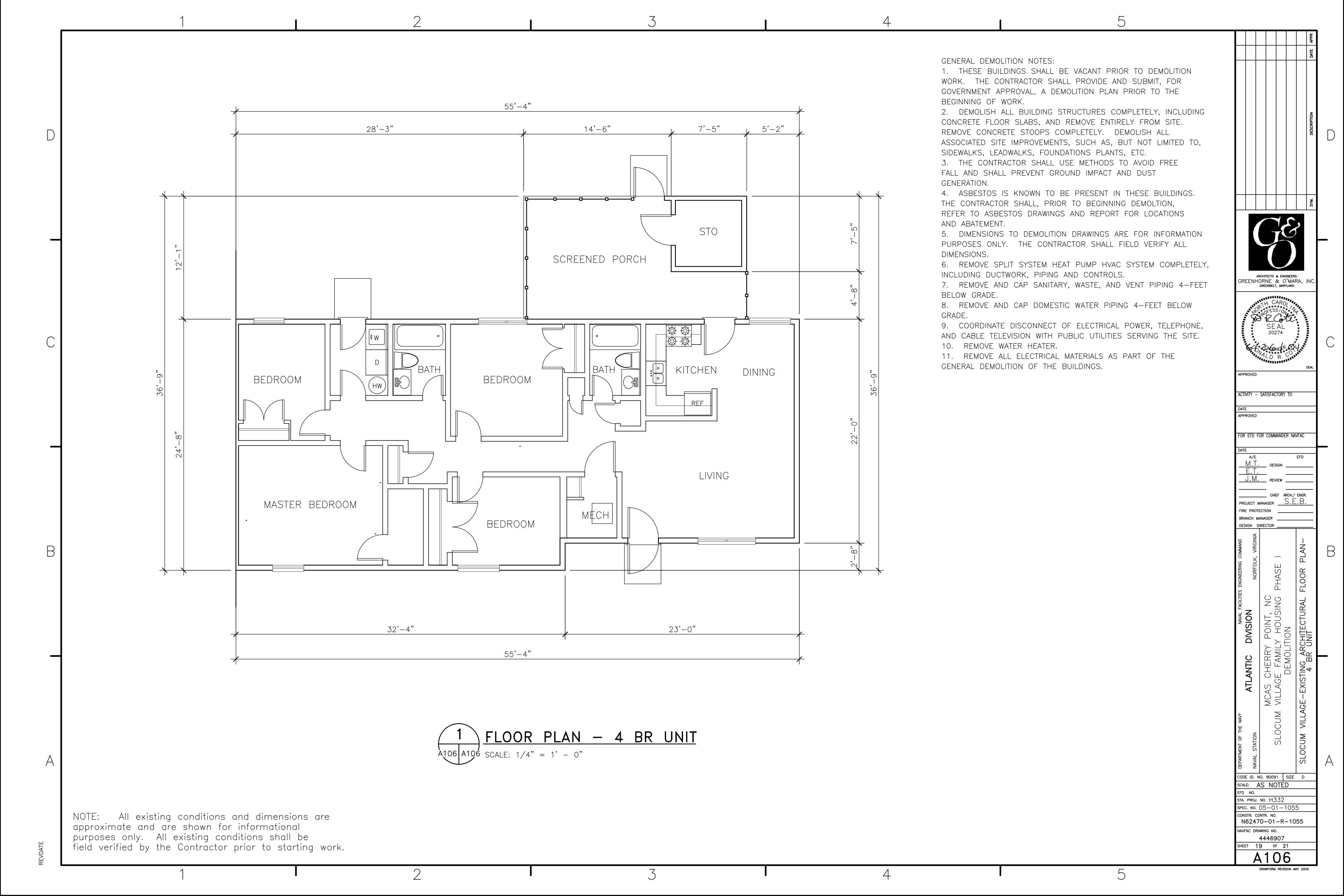


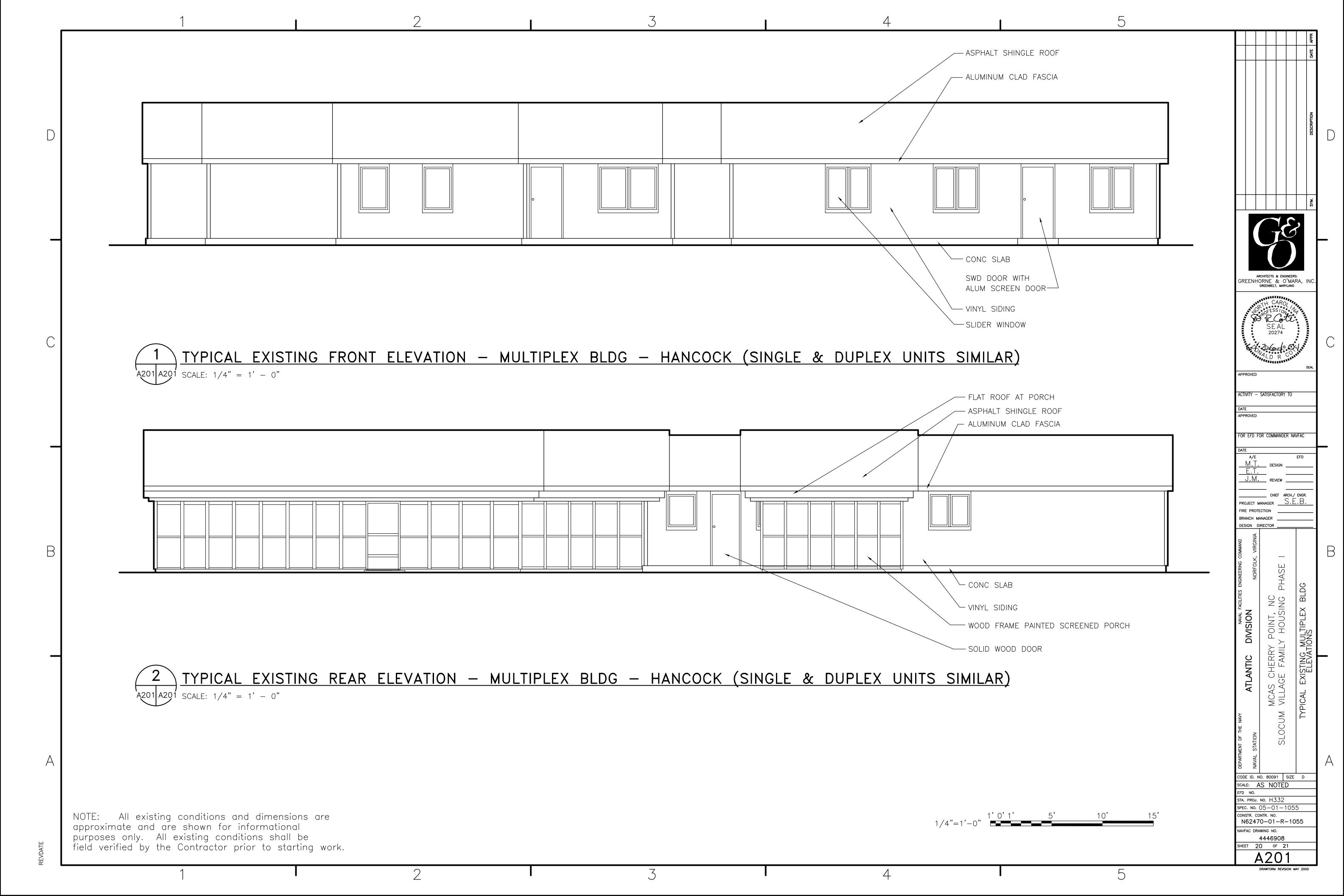


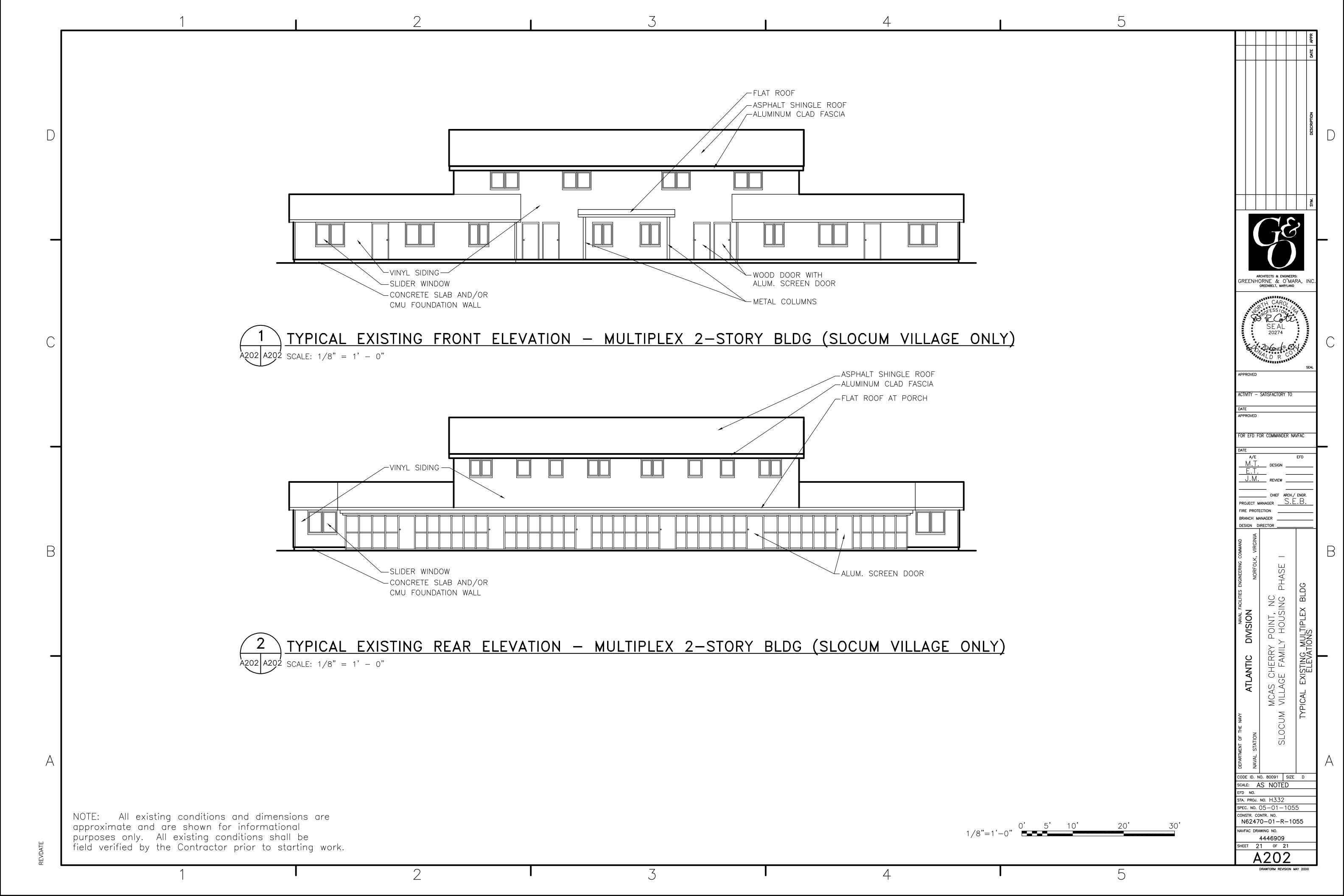












#### SECTION 01160

## DESIGN DOCUMENTS (01/01)

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

NIBS CCB (July 2000, No 53) Construction Criteria

Database

NIBS NCS (1999) United States National CAD Standards

NAVAL FACILITIES ENGINEERING COMMAND - ATLANTIC DIVISION REFERENCES (LANTNAVFACENGCOM)

LANTNAVFACENGCOM EBS (May 2000) Electronic Bid/Solicitation

LANTNAVFACENGCOM GSE (August 14, 2000) Guide Specification

Exceptions

LANTNAVFACENGCOM PSG (June 2000) Professional Services Guide

LANTNAVFACENGCOM PSG/DDG (June 2000) Design Discipline Guides

LANTNAVFACENGCOM SPM (Aug. 2000) Specification Preparation

Manual

LANTNAVFACENGCOM SPM/ISR (August 2000) Interim Specification

Revisions

SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA)

SMACNA HVACDALTM (1985) HVAC Air Duct Leakage Test Manual, 1st Edition and Updates

## 1.2 GENERAL DOCUMENTATION REQUIREMENTS

The Contractor shall provide a topographic survey and the design documents for the demolition and the new construction of the replacement family housing in Slocum Village and Hancock Village at the Marine Corps Air Station, Cherry Point, N.C. These design documents shall detail the design, means and methods, materials, finishes, equipment, systems, and plantings proposed to complete site improvements and supporting facilities, complete

and ready for use in Slocum Village Phase I, MCAS Cherry Point. The Contracting Officer (CO) shall review the documents for compliance with the RFP and issue an approval to proceed. The design documents shall represent a project design that complies with 01155, "Facility Program Requirements" and the design/build criteria specified in Section 01158, "Design/Build Criteria ". All Contractor-originated design documentation required by the RFP shall be provided in the English language. Design documents shall be provided as specified herein and in accordance with the requirements of LANTNAVFACENGCOM PSG, the Professional Services Guide, which is available on the LANTNAVFACENGCOM homepage located at www.efdlant.navfac.navy.mil/lantops\_04/home.html.

#### 1.3 DESIGN OWNERSHIP

All design documentation, including all supporting data, when submitted to the Government, shall become the property of the Government, except as specified otherwise in the contract.

## 1.4 QUALIFICATIONS OF DESIGNER

All of the work specified in this section and Section 01155 "Facility Program Requirements" and Section 01158 "Design/Build Criteria" shall be provided by an approved/licensed facility designer. Requirements for designer qualifications are specified in the contract requirements, Section 00202, "Evaluation Factors for Award" of the RFP.

## 1.5 SUBMITTALS

Design drawings and specifications shall be submitted for approval as specified and shall be accompanied by pertinent calculations and documentation as specified herein.

#### SD-01 Preconstruction Submittals

Geotechnical Survey G

Topographic Survey G

Demolition Plan G

Design Schedule G

## SD-05 Design Data

Geotechnical Survey G

Topographic Survey G

Design Drawings G

Design Specifications G

As-Built Design Drawings G

Design Calculations G

SD-07 Certificates

Roof Design Certificate (

Water Extension Permit Application G

Sanitary Sewer System Extension and Sewage Pumping Station Permit Application G

Erosion/Sedimentation Control Permit Application G

#### 1.6 DESIGN DRAWINGS

Submit Contractor-originated design drawings for all work required by this Request For Proposal (RFP). Contractor-originated design drawings shall clearly depict the technical design of the facility with particular attention to all points of equipment interface. Drawings shall be in sufficient detail to show compliance with the contract requirements.

A Master Plan concept design has been provided with this RFP and shall be used at the Contractor's discretion. Where the Contractor utilizes the Master Plan drawings furnished with this RFP in the preparation of the design/build drawings, new electronic files must be made from the drawings and the Contractor's title blocks used in lieu of those on the RFP drawings. Utilization of the RFP drawings shall be accomplished in a neat draftsmanship-like manner and in compliance with drawing standards specified below.

Utilization of the RFP drawings as part of the Contractor-originated drawings constitutes acceptance of the design responsibility by the Contractor. Contractor shall not be permitted to submit annotated (marked-up) copies of the RFP drawings as a part of their design/build drawings.

## 1.6.1 Drawing Standards

Comply with the Professional Services Guide (LANTNAVFACENGCOM PSG) and the related LANTNAVFACENGCOM PSG/DDG (Design Guides) for each design discipline. These publications are available on the LANTNAVFACENGCOM homepage at: http://www.efdlant.navfac.navy.mil/. Select "Professional Services Guide" and "Design Guide and Policy."

## 1.6.2 Computer Aided Drafting and Design (CADD) Drawings

Submit design drawings produced on a CADD system. Comply with the requirements specified in the "LANTDIV Electronic Bid Solicitation" LANTNAVFACENGCOM EBS (This will be called Electronic Solicitations (E~SOL) in the near future. This referenced publication is available on the LANTNAVFACENGCOM Design Division homepage located at

http://www.efdlant.navfac.navy.mil/lantops\_04/home.htm. Select "Design
Policy Docs".

Identify the CADD program to be used to generate the design drawings and confirm its compatibility for translation to AUTOCAD 2000. Provide drawings on CD-ROM disk(s) for file transfer to LANTNAVFACENGCOM. AUTOCAD is the preferred CADD program by LANTNAVFACENGCOM but is not required to produce the drawings for this project.

Submit all CADD files for the final drawings on CD-ROM disks in AUTOCAD 2000 format. Drawing files shall be full files, uncompressed and unzipped.

The Contractor-originated design drawings shall utilize the United States National CAD Standards (NIBS NCS) layering for this project.

Electronic copies of the RFP CADD.DWG drawing files, with the exception of reference drawings, will be made available to the successful proposer after contract award for use in preparing the contract design drawings. The RFP drawings that are not provided to the Contractor in CADD.DWG format will be supplied in .PDF format.

## 1.6.3 Naval Facilities (NAVFAC) Engineering Command Drawing Numbers

The Contractor-originated design drawings shall be numbered consecutively with NAVFAC drawing numbers. The Contractor shall request the quantity of drawing numbers that is anticipated for a complete set of construction documents. Drawing numbers shall be assigned by the Government, and issued to the Contractor by the Contracting Officer within 7 calendar days of Contractor's request.

## 1.6.4 Seal on Documents

All final Contractor-originated design drawings shall be signed, dated, and shall bear the seal of a registered Architect or a registered Engineer. This seal shall be the seal of the Designer of Record for that drawing. For example, the seal on the structural design drawings shall be that of the Structural Engineer who actually prepared the design or directly supervised the preparation of the structural design. A principal or authorized licensed or certified employee shall electronically sign and date final drawings and cover sheet, in accordance with LANTNAVFACENGCOM EBS. Provide signatures to each original sheet of drawings prepared by the registered architect or professional engineer, or someone under their direct control and personal supervision.

- a. All prefinal documents, incomplete plans, temporary plans, documents, and sketches whether advance or preliminary copies, shall be so identified and need not be sealed or signed.
- b. The seal of each registered Architect or registered Engineer responsible for each professional shall be used.
- c. Application of the electronic seal and signature indicates acceptance of responsibility for work shown thereon.

## 1.6.5 As-Built Design Drawings

Comply with Contract Clause FAC 5252.236-9310, Record Drawings in Division 00. Notwithstanding this provision to the contrary, the Contractor's Designer of Record shall provide additional work concerning the as-built drawings. The QC Manager shall deliver the marked-up As-Built drawings to the Contractor's Designer of Record who shall provide the incorporation of all as-built modifications.

The as-built modifications shall be accomplished by electronic drafting methods on the Contractor-originated CADD.DWG design drawings. For each As-Built drawing, provide CADD drawing identical to signed Contractor-originated .PDF Drawings, which also incorporate modifications to the as-built conditions. In addition, copy-initials and dates from the Contracting Officer approved .PDF documents to the title block of the As-Built CADD.DWG drawings. The As-Built electronic files shall have a "RD" added to the end of the file name just before the ".DWG" file extension. An example of properly arranged As-Built drawing file name is 02222.A-101RD.DWG. The RFP reference drawings are not required for inclusion in the As-Built set of drawings.

Provide two copies of the As-Built electronic files in AUTOCAD 2000, CADD.DWG format on CD-ROM disks. Mark CD-ROM Disk with "Project Name, Construction Contract Number, Project Number, Specification Number, and As-Built date.

## 1.7 DESIGN SPECIFICATIONS

The Contractor-originated design specifications shall comply with all RFP specification requirements. Requirements for the submission of the design specifications are specified below.

## 1.7.1 Division 01 Specifications

The specifications in this Division furnished with this RFP establish a minimum level of material/product quality and execution quality expected by the Government. The Contractor shall comply with, and submit with his design the Division 01 specifications sections furnished with this RFP, including the submittal register, without change except as specified in the section below. Disks containing the SPECSINTACT EDITOR word processor version of the RFP specification will be made available to the successful Proposer, upon request. The Contractor shall provide under this Division 01, Section 01561, "Erosion and Sediment Control", with the "Redline/Change" feature at the 100% Submittal and without redlines at the Design Phase Submittal Finalization.

## 1.7.2 Division 02 through 16 Design Specifications Originated by the Contractor

The Contractor shall develop specification sections for all materials and processes in this project for Division 02 through 16, based on the technical requirements specified in this RFP. The Contractor shall develop hazardous material abatement specifications in accordance with the requirements and regulations of the State of North Carolina, including

licensing.

#### 1.7.3 Specification Modifications

Division 01, furnished with this RFP, and Division 02 through 16, furnished by the Contractor shall be submitted with all amendments including pre-award amendments, Contracting Officer-originated post-award amendments, and Contractor-originated Contracting Officer-approved modifications, incorporated into the final specification development. The changes by additions and deletions shall be identified with the "Red-Lining/Change" feature of the SPECSINTACT Word Processing Program to identify these changes to the Division 01 included with this RFP and the Guide Specifications used to specify Division 02 through 16. Submit the specification with the "Redlining/Change" indicated at the 100% submittal and submit the specification with the changes incorporated, without redlines showing, at Design Phase Submittal Finalization.

## 1.7.4 Submittal Register

Provide a complete submittal register which complies with the requirements specified in Section 01330, "Submittal Procedures" for Divisions 01 through 16 design specifications. Register shall list all construction submittals that will be reviewed by the Architect of Record.

This register shall include all submittal items from the LANTNAVFACENGCOM Specification Database that are marked with a "G" and the "G" items listed in the "Reservation of Review and Approval by Government of Contractor Submittals on Construction Contracts" from Chapter 11 of the LANTNAVFACENGCOM SPM. The "G" items specified above in this paragraph are the minimum submittals to be reviewed by the Architect of Record. Additional submittals shall be added as required to assure quality control.

## 1.7.4.1 Facility Operation and Maintenance Support Information (OMSI) Requirements

Provide all OMSI submittal data required in the technical specification Guide Specifications for use by the Government to assemble the OMSI Manual.

## 1.7.5 LANTNAVFACENGCOM Specification Database

Specifications shall be provided using the latest version of SPECSINTACT Unified Facilities Guide Specifications (UFGS) and LANTNAVFACENGCOM Database. The technical specifications shall be edited and supplemented to suit the requirements of this RFP, except as specified otherwise. When the Unified Facilities Guide Specifications for proposed materials/products, methods, or systems do not exist, the format and make-up of the "no-guide" sections shall be the same as the UFGS SPECSINTACT/SGML Guide Specifications. Specification requirements shall be based on the LANTNAVFACENGCOM Data Base, the elements of which are listed below. The Contractor must comply with all requirements in this list of documents except as specified otherwise.

#### a. LANTNAVFACENGCOM Local Specifications

- (1) United Facilities SPECSINTACT/SGML Guide Specifications Database: Advance release of the latest issue of the Construction Criteria Base (CCB) at the time when the project gets awarded.
- (2) Sample Specifications: Posted on LANTDIV home page, such as UFGS-SS-02222, "Removal and Disposal of Petroleum Contaminated Soil and Water".
- (3) Local Master Guide Specifications: Posted on LANTDIV home page, such as NFGS-LM-15972, "Direct Digital Control System (For Little Creek)
- (4) Advance Release Specifications: Advance releases of NAVY Master or LANTDIV Master Guide Specs that are approved for use and will appear on the next NIBS CCB revision, such as UFGS-AL-16361, "Primary Unit Substations". These are posted temporarily on the LANTDIV home page.
- (5) LANTNAVFACENGCOM Local Specifications are available on the LANTNAVFACENGCOM Design Division homepage at http://www.efdlant.navfac.navy.mil/lantops\_04/home.htm, select "Specifications". A list of the current specification sections in this category is located in Chapter One (1) of the LANTNAVFACENGCOM SPM, "Specification Preparation Manual".
- (6) LANTNAVFACENGCOM Regional Guide Specifications which is designated "LANTDIV Master" on Construction Criteria Base (NIBS CCB). Example is UFGS-L-15400, "Plumbing"
- (7) Unified Facilities Master Guide Specifications, such as UFGS-15211, "Low Pressure Compressed Air Piping", on Construction Criteria Base (NIBS CCB).
- (8) Guide Specifications Exceptions (LANTNAVFACENGCOM GSE) modifying requirements and applicability of the LANTNAVFACENGCOM Database. These exceptions are an attachment to Specification Section 01158 , "Design/Build Criteria".
- (9) Interim Specification Revisions (LANTNAVFACENGCOM SPM/ISR) modifying the Unified Facilities Master Guide Specifications and LANTNAVFACENGCOM Regional Guide Specifications. This document is available as Chapter 8 in the manual LANTNAVFACENGCOM SPM at http://www.efdlant/navfac.navy.mil/lantops\_04/home.htm., select "Specifications".

The above listed order of the sample and guide specifications (specs) is the order of priority in which specification sections (for a given project component or system) are to be edited for application in the Division 02 through 16 specifications. In other words, the first source in the LANTNAVFACENGCOM Specification Database from which the select the appropriate specification section is the LANTNAVFACENGCOM Local Specifications, the second source is LANTNAVFACENGCOM Regional Guide Specifications, then the Unified Facilities Master Guide Specifications.

The Contractor shall only delete requirements from the Specifications if there is a bracketed option available within the Specification text. Comply with all non-bracketed requirements unless they do not pertain to systems or products in the design. Comply with the directions, directives, and requirements of all the Specification Criteria Notes. The Specification Criteria Notes are spread throughout the specifications in the Data Base, usually bordered by a line of asterisk.

#### 1.7.5.1 Non-LANTNAVFACENGCOM Specification Database

Where product specifications are not provided by this RFP, or the LANTNAVFACENGCOM Specification Database, the Contractor shall utilize specifications for this RFP that comply with the most stringent commercial standards available for that product.

## 1.7.5.2 Precedence

Contractor specification requirements shall comply with the requirements of the following documents listed in order of precedence: The first item on the list of precedence holds the highest priority and the last item holds the lowest priority. The contractor shall comply with the highest priority requirements over similar requirements of a lower priority.

The intention of this series of requirements is to establish a minimum level of quality based on the options available in the Guide Specifications and the modifications to these guide specifications specified by the 01155 "Facility Program Requirements", the 01158 "Design/Build Criteria", the LANTNAVFACENGCOM SPM/ISR, and the LANTNAVFACENGCOM GSE.

- (1) Specification Section 01155, "Facility Program Requirements" and Section 01158, "Design/Build Criteria".
- (2) Guide Specifications Exceptions (LANTNAVFACENGCOM GSE) .
- (3) LANTNAVFACENGCOM Local Specifications
- (4) Interim Specification Revisions (LANTNAVFACENGCOM SPM/ISR)
- (5) LANTNAVFACENGCOM Regional Guide Specifications on Construction Criteria Base (NIBS CCB).
- (6) Unified Master Guide Specifications on Construction Criteria Base (NIBS CCB).

## 1.8 DESIGN DRAWINGS LIST

Include Section 00102, "List of Drawings", with the list of all design drawings required for this project.

#### 1.9 DESIGN CALCULATIONS

Where specified for each phase of the design submittals, provide the required design calculations.

#### 1.10 DESIGN SCHEDULE

Submit a design schedule to the Contracting Officer, at the Predesign Meeting. Submit an updated schedule revision monthly thereafter. Include on the design schedule, the proposed schedule dates of each Contracting Officer design submittal review and the projected dates at which each design phase will be complete.

#### 1.11 Design Rendering

Provide rendering of the facility in accordance with the requirements in section UFGS-01580N, "Project Identification".

#### 1.12 VARIATIONS FROM RFP REQUIREMENTS

Variations from RFP requirements shall not appear on design document submittals unless the variation has been previously submitted to, reviewed by, and approved by the Contracting Officer. Variations shall be clearly presented so that these differences are easily identifiable during the review process.

The review and approval of design submittals does not constitute approval or acceptance of any variations from the RFP, unless such variations have been specifically pointed out in writing by the Contractor and specifically approved in writing by the Contracting Officer. The following specification references augment this requirement:

- a. Section 01158, "Design/Build Criteria", paragraph entitled "Precedence".
- b. Section 01158, "Design/Build Criteria", paragraph entitled "Specifications".
- c. Section 01158, "Design/Build Criteria", paragraph entitled "Value Engineering".
- d. Section 01330, "Submittal Procedures", paragraph entitled "Variations".

## 1.13 SEQUENCE OF DESIGN WORK

The Contractor shall provide design work in accordance with the following sequence.

## 1.13.1 Preliminary Design Meetings

The following meetings are required as a minimum. If other preliminary meetings are needed, Contractor shall schedule them with the Contracting Officer.

#### 1.13.1.1 Pre-Design Meeting

Within 30 calendar days after this solicitation contract is awarded, the Contractor, and his approved facility Design Team, shall meet with the Navy

at MCAS Cherry Point, North Carolina to discuss the design submittal requirements of this solicitation.

The Contractor shall forward agenda items to the Contracting Officer seven (7) calendar days prior to the planned date of the Meeting. In addition to the Contractor's discussion items, the following will be discussed:

- a. Design Submittal Packages
  - (1) Anticipated Phase Groupings
  - (2) Assignment of NAVFAC Drawing Numbers
- b. Design Submittal Schedule
- c. Design Submittal Format Requirements and Approval Process
- d. Construction Submittal Process
  - (1) Points of Contact
  - (2) Approving Authority
- e. Site Visit Schedule for RFP design preparer, i.e., LANTNAVFACENGCOM designer, AE designer for NAVY.
- f. Specification Submittals
- g. Design Drawing Submittals
  - (1) Proposed Software Program to generate contractor's design drawings
  - (2) Transfer of RFP CADD.DWG Files for Contractor's use in preparing contractor's design drawings.

## 1.13.1.2 Partnering Meeting

Refer to the requirements in Section 01310, "Administrative Requirements".

## 1.13.1.3 Design Presentation Meeting

a. Facility Design Presentation

Within 45 calendar days of the contract award and prior to the required design submittals, the Contractor shall present the conceptual design to the Contracting Officer's Review Team. The conceptual design presentation shall include an overall site plan, typical building floor plans for each unit type including individual gross and net area calculations, elevations, and building composite plans. The Contractor shall provide information regarding the site permitting, proposed structural systems, building materials, mechanical systems, and electrical systems in the form of a Basis of Design.

## b. Meeting Location

The Design Presentation Meeting shall be located at the office of MCAS Cherry Point, North Carolina. The Contractor shall coordinate the meeting times and dates with LANTNAVFACENGCOM Code MLB1 Project Manager . The intention of the Design Presentation Meeting is to provide information regarding the general direction of the project design and to ensure the design is proceeding in accordance with the RFP documents.

## 1.13.2 Design Work Submittal

The following is the sequence in which the Contractor must provide information:

#### a. Title Sheets

Provide two types of title sheets for Fast-Track Design/Build Project Submittals. One title sheet is the Project Title Sheet and the other is the Design Phase Title Sheet.

The Project Title Sheet shall be submitted with the first design submittal and will provide overall guidance within the design submittals. The Project Title Sheet shall indicate each design phase submittal (agreed to in the Pre-Design Meeting) organized in the sequence in which the submittals are proposed for submission for LANTNAVFACENGCOM approval. Each design submittal shall indicate which design disciplines have drawings as a part of the submittal. This Project Title Sheet is only required at the first submittal review and the Finalization of the last submittal.

Each design submittal will require its own Design Submittal Title Sheet. The Design Phase Title Sheet shall be unique to a particular design phase and list all drawings that are a part of that submittal. The Design Phase Title Sheet shall include, Sheet Number, NAVFAC Drawing Number, and Sheet Title for each drawing sheet.

## b. 100% Complete Design Submittals

Contractor shall submit 100% complete paper copies without professional signatures of all submittal information required. The submittal shall clearly indicate all portions of the submittals which the contractor is submitting for approval. Clearly mark any additional information and package them separately from the approval requested phase(s) portion of the submittal.

## c. Contracting Officer's Review of 100% Complete Submittals

Contracting Officer, Activity LANTNAVFACENGCOM's A/E and LANTNAVACENGCOM will simultaneously review each design phase and specification submittal. Comments are assembled by Contracting Officer and forwarded back to the Contractor for resolution. Time allowed for review is specified in paragraph entitled "Duration of

Reviews".

All submittals returned from Contracting Officer's Review Team will be classified in one of two categories, either the submittal shall be (1) Resubmitted or (2) Finalized. Resubmittals are required for critical rework. Finalization is required if no changes or minor changes are indicated and do not require critical rework. Provide Design Finalization if a resubmittal is not required by the Contracting officer.

d. Contractors Resolution of Comments or Finalization

Provide written responses to all written comments by the Contracting Officer's Review Team and proceed to resubmit or finalize the Design Phase Submittal.

(1) Design Phase Resubmittals

When a design submittal is considered unacceptable to the Contracting Officer's Review Team, the Contractor shall be so advised and required to provide a resubmittal for that particular design phase. The quantities of copies and duration of reviews for resubmittals shall be the same as specified for each design submittal.

(2) Finalization Submittal of Design Phase Drawings and Specifications

Finalization applies to all design phase packages submitted for approval by the Contractor. When all review comments have been resolved, the Contractor shall submit the revised submittal with review comments incorporated for final approval and signatures. The quantities of paper copies for revised submittals shall be the same as specified above for each design submittal. In addition, the Contractor shall submit two electronic copies of the Contractor-originated, signed drawings assembled and bookmarked in .PDF format on CD-ROM disk to LANTNAVFACENGCOM, Code MLB1.

Provide electronic professional seals and signatures on the Final .PDF Drawings using the LANTNAVFACENGCOM signature process required in the LANTNAVFACENGCOM PSG. Submit specifications in .PDF format.

Upon securing signatures for the approved submittal, LANTNAVFACENGCOM will return the Contractor-originated .PDF drawings and specifications to the Contractor for the Contractor's printing, distribution, construction work and as-built effort. Time allowed for review is specified in paragraph "Duration of Reviews" above.

(3) Finalization Submittal of Last Design Phase Drawings and Specifications

The electronic copies for finalization is different at the

Remaining Work Design Phase Submittal. This submittal becomes the final assembled set of design documents for the completed design.

At Remaining Work Design Phase Submittal Finalization, provide two electronic copies in .PDF format and two electronic copies in CADD.DWG format of all Design Phase Drawings. The CADD.DWG and .PDF electronic copies shall be identical in content except the .PDF copies shall have the Contractor's A/E professional signatures on all sheets and LANTNAVFACENGCOM's approval signatures on all previously approved Design Phase Drawing Sheets. The .PDF files shall be assembled and bookmarked by sheet number, sheet title and submittal phase.

The .PDF files shall include the Contractor's signed Remaining Work drawings, all the previously LANTNAVFACENGCOM approved drawings, and the Project Title Sheet. The .PDF file shall be a completed electronic copy of the entire project without LANTNAVFACENGCOM signatures on the Remaining Work portion of the Submittal.

#### 1.13.3 Model Unit

Provide model unit in compliance with the requirements specified in Section 01150, "Special Project Procedures".

#### 1.13.4 Final Punch-List Items

The following items are to be added to the Contracting Officers Final Punch-list.

#### a. As-built Submittals

Provide electronic As-Built drawings of all contract drawings used to construct the facility.

#### b. Operations and Maintenance Submittal Data

Provide Operations and Maintenance submittals to the Contracting Officer in accordance with Section 01781, "Operation and Maintenance Data," as listed in the SD-02 Shop Drawings submittals of all the technical specifications.

## 1.14 SITE VISIT INSPECTIONS

Provide site visit inspections in compliance with the paragraph entitled "Representation of the Designer of Record" in Section 01450, "Quality Control".

#### 1.15 CONTRACTOR'S A/E PERFORMANCE EVALUATION

The Contracting Officer's review team shall evaluate the Contractor's A/E's performance for all design related work throughout the duration of this contract and document this evaluation.

## PART 2 PRODUCTS

#### 2.1 DESIGN AND CONSTRUCTION

It is anticipated by the Contracting Officer that the work will be constructed in the following phases:

- a. Hazardous Material Abatement Work Phase
- b. Master Site Plan Phase
- c. Sitework , Environmental and Civil Work Phase
- d. Geotechnical Work Phase
- e. Foundation Work Phase
- f. Structural Work Phase
- g. Building Enclosure Work Phase
- h. Remaining Work Phase

The design documents submittal schedule shall be set up to facilitate the above construction phases. The Contractor may group any combination of adjacent Design Phases into larger submittal packages to suit his construction schedule. Submitting fragmented or partial submittals of the listed Design and Construction Phases is not acceptable. All combinations of Design Phases for submittal purposes must be approved at the Pre-Design Meetings. Design Phase Submittals shall include all the requirements listed in the RFP for that construction phase and partial submittals will be returned without review.

The design submittal for each of the above listed construction phases shall be approved prior to commencement of procurement, fabrication or construction for that phase.

Design drawings, design specifications, and design documentation, when approved by the Contracting Officer, shall be considered approved for use for contract construction. The Contracting Officer's approvals of design documentation as well as authorization to commence construction must be in writing.

## 2.2 DESIGN SUBMITTAL APPROVAL PROCESS

## 2.2.1 Submittal Phases

## 2.2.1.1 Fast Track Design

All Contractor design submittals shall be identified using one of the design phase descriptions specified below, including the LANTNAVFACENGCOM tracking symbols, annotated in parenthesis at the end of each design phase. An example of a design phase title is "Foundation Work Design Submittal (F)"

If design phases are grouped, the design phases that are furnished in the submittal shall be included in the title of the design submittal. An example of a grouped design phase title is "Foundation Work Design Submittal (F) and Structural Work Design Submittal (S)"

The following design submittal phasing is set up to coincide with finite construction phases to allow the specified construction to fast track, i.e., to begin portions of the work prior to 100 percent of the project design being completed, reviewed, and approved:

- a. Hazardous Material Abatement Plan Design Submittal (H)
- b. Master Site Plan Submittal(M)

A Master Site Plan has been prepared for the Project and has been included in the RFP documents. The Contractor is not required to prepare a Master Site Plan if the proposed Project Site Plan prepared by the Contractor for this Phase I Project is in substantial conformance to the Master Site Plan provided. If the Contractor recommends site development that does not generally conform to the Master Site Plan provided, an alternative Master Site Plan for replacement of all 775 existing units in Slocum Village shall be submitted showing total replacement of the Slocum Village neighborhood in three (3) phases.

c. Sitework , Environmental and Civil Work Design Submittal(C)

The Sitework, Environmental, and Civil work submittal shall include Civil work, Topographic Survey, Landscaping, Mechanical Sitework, Electrical Sitework, Demolition including Hazardous Materials design, Environmental Design (Erosion Control, Stormwater Management), and Specifications.

- d. Geotechnical Work Design Submittal(G)
- e. Foundation Work Design Submittal(F)
- f. Structural Work Design Submittal(S)
- g. Building Enclosure(Architectural Exterior)Work Design Submittal(BE)
- h. Remaining Work Design Submittal(RW)

The Geotechnical Design Work Submittal shall be reviewed and approved by the Contracting Officer prior to the Foundation Work Design Submittal. Provide design drawings for all work covered by each design submittal phase. Copies of each design submittal sets of drawings shall be half-size (scaled sheets reduced to 11x17 size), bound, and shall include a Title Sheet and Index of Drawings sheet unique to that design submittal phase.

2.2.1.2 Contracting Officer's Design Document Reviews

Prior to Contractor's procurement or fabrication of the work, the

corresponding design document submittals shall be reviewed and approved by the Contracting Officer. Except as specified otherwise, post-design construction submittals shall be approved by the QC Manager after review and acceptance by the Contractor's Authorized Reviewer. Refer to Section 01330, "Submittal Procedures", and Section 01450, "Quality Control" for related post-design construction submittal approval requirements.

## 2.2.1.3 Design Reviews at MCAS Cherry Point, North Carolina

Prior to Contractor's procurement or fabrication of the work, the design documents for each corresponding design submittal phase must be reviewed and accepted by the Contracting Officer's review team. The Contracting Officer's reviews shall be conducted concurrently at the offices of LANTNAVFACENGCOM located in Norfolk, Virginia, LANTNAVFACENGCOM's A/E, located in Greenbelt, Maryland, the Contracting Officer and the Activity located in Cherry Point, North Carolina.

#### 2.2.1.4 Duration of Reviews

The Contractor shall allow the number of consecutive calendar days specified hereinafter as the time required by the Government to review each submittal for the design phase indicated. The time for review begins upon receipt of the submittal at LANTNAVFACENGCOM, Code MLB1.

а	Hazardous	Material	Abatement	Submittal	1.0	calendar	davs
a .	mazaruous	Material	ADatement	Bubilittat	T 0	Carcildar	uays

b. Master Site Plan Submittal 14 calendar days

c. Sitework , Environmental, and Civil Work Design Submittal:

14 calendar day

d. Geotechnical Work Design Submittal: 10 calendar days

e. Foundation Work Design Submittal: 14 calendar days

f. Structural Work Design Submittal: 14 calendar days

g. Building Enclosure Work Design Submittal: 21 calendar days

h. Remaining Work Design Submittal: 21 calendar days

If the Contractor packages several submittals together, the individual package with the longest review time controls the Contracting Officer's duration of review for that submittal.

Allow 10 calendar days after receipt of the finalized submittal at LANTNAVFACENGCOM Code MLB1 for final approval.

## 2.2.1.5 Forwarding of Required Design Submittals

Submit, to the following agencies and Government representatives, copies of all submittals required by this specification section:

a. Contracting Officer

Area: OIC NAVFAC CONTRACTS
Attention: FACILITIES, MCAS
Phone: Bldg 163, Curtis Ave.

Address: MCAS Cherry Point, NC 28533-0006

b. Reviewing Activity

Activity: Commanding General, Facilities Development Office

Attention: Mr. Gerald Frazier, Code LF

Phone: 252-466-4771

Address: Bldg 163, Curtis Ave., MCAS Cherry Point, NC

c. LANTNAVFACENGCOM

Integrated Product Team, Code MLB1 Attention: Mr. Tim Osborne

Phone: 757-322-8345
Address: Building N-26,

1510 Gilbert Street, Naval Station,

Norfolk, Virginia, 23511-2699

d. LANTNAVFACENGCOM's A/E

Company: Greenhorne & O'Mara, Inc.

Attention: Susan Ballard Phone: 301-982-2857

Address: 9001 Edmonston Road, Greenbelt, MD, 20770

2.2.1.6 Quantities of Design Documents Required

Notwithstanding the requirements of Contract Clause entitled "Shop Drawings", the quantity of submittals required shall be as specified in this section for all completion of levels of submittals. Submit copies of design drawings, specifications, calculations, manufacturer's catalog data for proprietary products, and supporting documentation in accordance with this section; submit as follows:

Fast Track Design Submittals

a. Submit 2 copies of the "proposed design" submittal and design specifications to each of the following:

Contracting Officer

Reviewing Activity

LANTNAVFACENGCOM's RFP preparing A/E

- b. Submit 7 copies of the "proposed design" submittal to LANTNAVFACENGCOM, Code MLB1. Exceptions to the number of required "contract documents" submittals are noted in parenthesis below. In addition to the paper copies, at the Design Finalization of each design phase submittal, provide signed original drawings in .PDF format on CD-ROM disk. Packaging of several submittals together into one submittal does not change the number of copy requirements for each submittal.
  - (1) Hazardous Materials Abatement Plan Submittal

- (2) Master Site Plan Submittal
- (3) Sitework, Environmental, and Civil Work Design Submittal
- (4) Geotechnical Work Design Submittal (2 copies of the "proposed design" submittal)
- (5) Foundation Work Design Submittal (3 copies of the "proposed design" submittal)
- (6) Structural Work Design Submittal (3 copies of the "proposed design" submittal)
- (7) Building Enclosure Work Design Submittal
- (8) Remaining Work Design Submittal
- (9) Final Specifications

At Design Finalization of Remaining Work design submittal, all drawings and specification, provide paper copies for review as required above, two signed and sealed electronic copies in .PDF format, and two electronic copies in CADD.DWG format. Submit all electronic submittals on CD-ROM disks for the drawings and 3-1/2" diskettes for the specifications..

### 2.2.2 Level of Drawing Completion

Drawings shall include all the drawings listed in this specification section as a minimum. Provide drawings and details as required to fully describe the construction. The drawing details shall include all the information and details listed in Criteria Notes of each NAVFAC and LANTNAVFACENGCOM Division 02 through 16 technical guide specification sections.

## 2.2.3 Review Comments Resolution

The Contracting Officer's Review Team shall review each design and specification submittal and provide comments regarding the submitted documents compliance to the RFP. The Contractor shall acceptably address all comments on the design and specification submittals and subsequently correct the submittals for Resubmittal or Finalization review. All review comments shall be returned with the subsequent revised submittals, annotated with the responses of Contractor's A/E. Each comment from the Contracting Officer's Review Team shall have an individual response by Contractor's A/E.

If the comment is incorporated into the design, the response shall so indicate. If the comment was not incorporated, an acceptable explanation shall be provided by the Contractor for not doing so.

## 2.3 HAZARDOUS MATERIAL ABATEMENT DESIGN SUBMITTAL

The Contractor shall secure the services of various professionals licensed in the State of North Carolina for the purposes of asbestos project design, lead project design, and other related services.

A comprehensive work plan detailing the method for removal/abatement and disposal of identified asbestos-containing materials (ACM), PCB-containing light ballast, mercury-containing items, lead-based paint, and other hazardous materials shall be submitted by the Contractor.

## 2.3.1 Hazardous Material Abatement Specification Submittals

The Contractor shall submit asbestos, lead-based paint, PCB and mercury-containing items removal specifications and comprehensive workplans detailing the methods for removal/abatement and disposal of each identified hazardous material.

The specification submittals shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specifications were selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

#### 2.4 MASTER PLAN DESIGN SUBMITTAL

Provide an overall plan for replacement of the entire Slocum Village neighborhood that indicates a long-term strategy for the continued replacement housing only if the Master Plan provided does not conform to the proposed sitework plans submitted by the Contractor. At a minimum, the Master Plan shall identify land use, stormwater management, building types (size, quantity, and location), open space areas, landscape and site amenities. The Master Plan shall identify other site features such as entrance features or other focal areas, trails, recreation facilities, tree preservation, compatibility with existing site features and utilities to remain. The Master Plan drawings shall be prepared at a scale of 1:200 or larger.

## 2.4.1 Master Plan Specification Submittal

If a revised Master Plan is proposed, the Contractor shall submit specifications. The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.5 SITEWORK, ENVIRONMENTAL AND CIVIL WORK DESIGN SUBMITTAL

## 2.5.1 Sitework, Environmental, and Civil Work Design Submittal

This submittal shall completely cover the Sitework, Environmental, and Civil Work Design Phase of construction and shall include all specified documentation. Design drawings for this particular design phase shall be 100 percent complete. Provide a Design Phase Title Sheet with index of drawings unique to this design phase; these drawings require NAVFAC drawing

numbers.

## 2.5.1.1 Civil Work Basis of Design (BOD)

Provide a Civil Work Basis of Design (BOD) in the initial Sitework, Environmental, and Civil Work Design submittal. Include a general narrative presentation of project, identify reference criteria and code used, describe existing site conditions, identify demolition items, describe new site work, grading, water supply, sanitary sewerage, storm drainage system, landscape design and discuss best management practices (BMP's) with stormwater management plan, emphasizing passive controls, discuss erosion and sediment control and designs conformance to state requirements, and identify environmental permits necessary for construction and operation of the facility.

## 2.5.1.2 Civil Design Calculation

Provide design calculations at all stages of design certified by a North Carolina Professional Engineer. Provide design calculation for the storm drainage system and water quality facilities. Provide design calculation for sanitary sewage piping. Provide design calculation for water system, using KYPIPES water system analysis or equal computer program.

## 2.5.1.3 Civil Work Drawings

On the first Civil Sheet, provide legend, abbreviations, and general notes relating to civil items. The vicinity map with the project site location shall be on the Title Sheet.

Provide topographic survey, sitework and civil design drawings to an English scale of 1"=25' (minimum) for all site plans and 1"=25' (minimum) (vertical) for profiles (with stationing increasing from left to right). Contour lines at 0.5 foot intervals in grading and drainage plans (not 1.0 foot intervals). Coordinate with other disciplines so that scale and orientation for all site plans are the same. Provide location of north on all site plans (with north preferable towards the top of the sheet). Indicate surface materials (i.e. grass, bituminous concrete, concrete, etc.) on site plans.

- a. Provide demolition plan utilizing the topographic survey plans, indicating location where demolition will begin in each sub-phase of construction. The plan shall define access roads, fence locations, units to be demolished, and the material and extent of demolition.
- b. Provide layout plan indicating dimensions from construction baseline, or another readily identified (and easily established) alignment in the field. Include horizontal control point locations and descriptions. Show paving, curb, curb and gutter, building, and new and existing site features.
- c. Provide a topographic survey. Inventory all existing trees greater than four inches DBH with annotation for species and size. Provide grading and drainage plan indicating existing and new

spot elevations and contours to clearly indicate drainage patterns before and after construction. Provide contour lines a minimum 0.5 foot intervals. Indicate the storm drainage features, including storm drainage piping size, catch basins, ditches, and passive stormwater controls. Provide storm drainage piping size, slope, material, elevations, and length. Indicate vertical control and datum with notes on this sheet. Indicate finish floor elevation. Indicate how grading ties into existing grading limits, and verify that new work will not block existing adjacent drainage. Coordinate with Landscape Plan to prevent new plants from blocking site drainage. Label each structure so plans and profiles are easily coordinated.

- d. Provide water and sanitary sewage plan. Indicate new connection points with connection method. Show nearest valves to isolate the connection, if used. Indicate special scheduling requirements. Indicate pipe and miscellaneous features (manhole, clean out, valves etc.) size, material, length and elevations. Indicate location and design of new sewer pump station. Provide for the maintenance of water and sewer service to existing adjacent occupied dwelling units and other facilities to remain.
- e. Provide a Landscape and Recreation Plan. Show existing trees to be preserved, new planting, and new recreation facilities.

  Provide planting and recreation facilities details. Include plant legend with plant species, size, and planting specifications.

  Provide typical foundation planting plans with alterations for sun and shade locations.
- f. Provide erosion and sedimentation control plan (EC&S) in conformance with North Carolina state standards. Show locations of all EC&S control items. Indicate drainage features (i.e. catch basins, curb inlets, manholes, etc.).
- g. Provide storm drainage profiles. Indicate structure tops, pipe invert elevations, slopes, lengths and diameters. Indicate all crossing utility lines, both existing and new. Coordinate information with plan sheets.
- h. Provide site/utility details. Reference state standards where used.
- i. Details listed in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes.

## 2.5.1.4 Sitework Drawing Submittal

Provide complete sitework design plans in accordance with sitework requirements identified here and in sitework paragraph located in Remaining Work Design portion of the RFP. This submittal shall include civil, mechanical, electrical, landscape, demolition and environmental sitework.

2.5.1.5 Sitework, Environmental and Civil Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.5.2 Design Related Permits

Timely acquisitions of all necessary design and construction related permits shall be the responsibility of the Contractor. As some permit process times take 6 months or more, the Contractor shall immediately begin working on the permits so as not to delay completion of the project. The Contractor is responsible for and shall pay all fees associated with obtaining these permits. The Contractor-originated work required for the following permit approvals shall be furnished for this project:

- a. Water Extension Permit Approval
- b. Sanitary Sewer System Extension and Sewage Pumping Station Permit Approval
- c. Pollution Discharge Elimination System Storm Water Permit Approval
- d. Erosion/Sedimentation Control Permit Approval

## 2.5.2.1 Water Extension Permit Application

The Contractor shall provide completed and approved permit application for water extension. Package shall be submitted to MCAS Environmental Affairs Department (EAD), 252-466-4562, for submittal to the state. Submit three copies of the Contractor-originated project design plans, Contractor-originated specs and design calculations with this application to North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply System, 1634 Mail Service Center, Raleigh, NC 27699. There are no fees required for this permit application. Permit application form can be obtained from DENR, 919-733-2321. Contractor shall allow a minimum of a 30 day review time.

# 2.5.2.2 Sanitary Sewer System Extension and Sewage Pumping Station Permit Application

Contractor shall submit and obtain approval from NCDENR for new sewer line and pump station. Package shall be submitted to MCAS Environmental Affairs Department (EAD), 252-466-4562, for submittal to the state. The fee required for this permit application is \$400.00. Submit three copies of each of the following to North Carolina Environment and Natural Resources (DENR), Division of Water Quality, 1617 Mail Service Center, Raleigh, NC 27699-1617, 919-733-5083. Contractor-originated project plans, Contractor-originated specifications, design calculations, including pump station details required by NCDENR Sewage Regulations, and Portable Equipment Form relating to the sanitary sewage system and pump curves.

Application must be complete and must contain Contractor-originated signed and sealed drawings, Contractor-originated specifications, and basis of design/calculations. If the State or local agencies requires corrections to

the permit applications for approval, the application will be returned to the Contractor for corrective action as stated above. The appropriate forms for submitting permit applications can be obtained from NCDENR, or http://www.h20.enr.state.nc.us/ndpu.scspnc.html. Contractor shall allow between 45-60 days review time for a fast track submittal, or up to 90 days review time for a regular submittal.

## 2.5.2.3 Storm Water Permit Application (NPDES)

The Contractor shall provide a stormwater management plan to verify conformance with the previously obtained MCAS Slocum Village Stormwater Management Permit (based on the Master Plan by Greenhorne & O'Mara). Package shall be submitted to MCAS Environmental Affairs Department (EAD), 252-466-4562, for submittal to the state. Submit the compliance permit application, plans, and \$420.00 fee to Division of Water Quality (DWQ), Department of Environment and Natural Resources (DENR), 943 Washington Square Mall, Washington, NC 27889, 252-946-6481. Contractor shall allow up to a 60 day review time.

#### 2.5.2.4 Erosion/Sedimentation Control Permit Application

The Contractor shall provide an erosion/sedimentation control plan in conformance to the NC ESCPDM. Package shall be submitted to MCAS Environmental Affairs Department (EAD), 252-466-4562, for submittal to the state. Forms are available at:

http://www.dlr.enr.state.nc.us/eroforms.html, or from the Wilmington, NC office. Fee will vary depending on amount of total disturbed area (\$40 per disturbed acre or part thereof). Submit the erosion/sedimentation control permit application (original plus two copies) signed and sealed by a professional civil engineer, financial responsibility form (original plus one copy) and 3 copies of the plans and specifications to the Wilmington Regional Office, 127 Cardinal Drive Extension, Wilmington, NC 28405, 910-395-3900, FAX 910-350-2004. Contractor shall allow a minimum of a 30 day review time. The plan must be approved prior to any land-disturbing activities.

## 2.6 GEOTECHNICAL WORK DESIGN SUBMITTAL

## 2.6.1 Submittal General Requirements

Prior to the foundation work design submittal, submit to LANTNAVFACENGCOM, Contractor's Geotechnical Report for approval. This report will become the property of the Government.

## 2.6.2 Geotechnical Report

A geotechnical report will be provided by the Government and will be available as an amendment. The Contractor shall conduct a subsurface investigation. The Contractor shall submit a written geotechnical report based upon the subsurface investigation data and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. The Geotechnical Report shall include the following.

a. The project site description, vicinity map and site map.

- b. Results of all the field and laboratory testing, whether Government or Contractor-provided.
- c. Engineering analysis, discussion and recommendations addressing:
  - (1) Settlement
  - (2) Bearing capacity
  - (3) Foundation selection and construction considerations, (deep, shallow, special); dimensions, and installation procedures
  - (4) Site preparation (earthwork procedures and equipment), compaction, building slab preparation (if applicable), soil sensitivity to weather and equipment, and groundwater influence on construction
  - (5) Sheeting and shoring considerations, as applicable
  - (6) Pavement design parameters, actual or assumed, thickness and materials, for modifications to the provided pavement design only
  - (7) Haul routes and stockpiles
  - (8) Calculations

## 2.6.3 Geotechnical Site Data

Drawings submitted with Contractor's design shall include all boring locations and geotechnical data performed by the Contractor. If any additional borings are performed, the locations of these borings shall be indicated on the drawings submitted with the Contractors's design. The applicable design drawings shall be revised to reference the soils report prepared and submitted by the Contractor's Geotechnical Engineer.

## 2.6.4 Geotechnical Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.7 FOUNDATION WORK DESIGN SUBMITTAL

This submittal shall completely cover the Foundation Work Phase of construction. Design drawings for this particular design phase shall be 100 percent complete, except as specified otherwise. Provide a Title Sheet with index of drawings unique to this design phase. All drawings require NAVFAC drawing numbers.

#### 2.7.1 Foundation Design Drawings

Submit the following:

- a. Foundation plan.
- b. Foundation sections and details.
- c. Localized finish grade elevations around exterior of each building.
- d. Location around each building of utilities, including domestic water, heating hot water, sanitary drains, and roof drains, indicating how they impact the structure's foundation design.
- e. Floor framing plan.
- f. Ceiling/Attic framing plan.
- g. Roof framing plan.
- h. General notes of the structural drawings shall list the following:
  - (1) Design live loads
  - (2) Roof uplift loads
  - (3) Seismic zone
  - (4) Shallow foundation data
  - (5) List of codes and criteria used in building design
  - (6) List of material strengths used in building design, for example, concrete compressive strength equals 3000 PSI at 28 days.
- i. On each of the above drawings, indicate the penetrations required in the foundation systems by utility piping, including mechanical piping, fire protection piping, and electrical ducts and conduit.
- j. Details listed in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes.

## 2.7.2 Foundation Design Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.7.3 Foundation Design Calculations

Submit the following design calculations:

- a. Application of loads to the buildings
- b. Lateral load analysis, seismic loads and wind loads

- c. Gravity load analysis
- d. Shallow foundation design, detailing loads at foundation level, foundation construction, including reinforcing and concrete strength, foundation size and bearing capacity.

#### 2.8 STRUCTURAL WORK DESIGN SUBMITTAL

This submittal shall completely cover the Structural Work Phase of construction, and shall include all specified documentation. Design drawings for this particular design phase shall be 100 percent complete, except as specified otherwise. Provide a Title Sheet with index of drawings unique to this design phase. All drawings require NAVFAC drawing numbers.

## 2.8.1 Structural Design Drawings

Submit the following:

- a. Floor framing plans, floor plan(s), sections and details.
- b. Ceiling/Attic framing plans, sections, and details.
- c. Roof framing plan, sections, and details.
- d. On each of the above drawings and on all floor slab drawings, indicate the penetrations required in the structural systems by utility piping, including mechanical piping, fire protection piping, and electrical ducts and conduit.
- e. Details listed in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes

## 2.8.2 Structural Design Calculations

Submit, as a minimum, the following structural design calculations:

- a. Design of floors, walls, roofs, frames and bracing.
- 2.8.3 Structural Design Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.9 BUILDING ENCLOSURE WORK DESIGN SUBMITTAL

This submittal shall completely cover the Building Enclosure Work Phase of construction, and shall include all specified documentation. Design drawings for this particular design phase shall be 100 percent complete, except as specified otherwise. Provide a Title Sheet with index of drawings unique to this design phase. All drawings require NAVFAC drawing numbers.

#### 2.9.1 Building Enclosure Design Drawings

Submit the following:

- a. Building elevations.
- b. Exterior wall sections.
- c. Floor plans with gross and net area calculations for each unit type.
- d. Roof plans and details at a scale of 3" to 1'0".
- e. Exterior door schedule, door and frame types, hardware schedule, and door details.
- f. Window schedule and details.
- g. Exterior construction joint, expansion joint, and exterior wall details.
- h. Integrated exterior finish and color schedule.
- i. Mechanical and Electrical layouts and rough-ins affecting the building enclosure.
- j. Details listed in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes

The Contractor's A/E shall contact the Activity/User via the Contracting Officer, and coordinate any interior color selections prior to submitting the design.

Describe materials for all major items of construction and all interior and exterior finishes. The description of finishes (colors, textures, and patterns) shall be accomplished by the use of a finish schedule, color legend, and notes. The finish schedule shall identify interior building material finishes.

All reference to building colors shall be on the drawings in the color legend that is referenced in the finish schedule. Any finishes not referenced in the color code columns of the finish schedule should be in either the comments section or color notes.

The Contractor shall utilize the services of a Registered Roof Consultant (RRC) certified by Roof Consultant Institute, or a Registered Professional Architect or Engineer, that specializes in roofing, to approve this project's roof design. This roofing specialist must have at least 50% of his business dealing solely with roofing design and construction. Contractor shall submit written project Roof Design Certificate that verifies that the roof specialist approves of the project roof design.

## 2.9.2 Exterior Color Design for Building Enclosure

Provide a generic color board.

The Contractor shall assume that consultation time with the Activity/User will be required prior to submitting color boards, and that changes to the color scheme may occur after the color board submission.

The Contractor's A/E shall contact the Activity/User via the Contracting Officer and coordinate interior color selections prior to submitting the design.

Describe materials for all major items of construction and all exterior finishes. The description of finishes (colors, textures, and patterns) shall be accomplished by the use of a finish schedule, color legend and notes. The finish schedule on the design drawings shall identify exterior building material finishes.

All references to building colors shall be on the drawings in the color legend that is referenced in the finish schedule. Any finishes not referenced in the color code columns of the finish schedule should be in either the comments section or color notes.

## 2.9.3 Building Enclosure Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.10 REMAINING WORK DESIGN SUBMITTAL

This submittal shall completely cover the Remaining Work phase of construction, and shall include all specified documentation. Design drawings and specifications for this particular design phase shall be 100 percent complete, except as specified otherwise. Provide a Title Sheet with index of drawings unique to this design phase. All drawings require NAVFAC drawing numbers.

## 2.10.1 Architectural Design Drawings For Remaining Work

Submit the following:

- a. Floor plans, including room names and room dimensions.
- b. Building elevations.
- c. Wall Sections.
- d. Building sections.
- e. Bathroom and kitchen plans, elevations, and details.
- f. Interior door schedule, door and frame types, hardware schedule, and door details.

- q. Interior window schedule and details.
- h. Construction joint, expansion joint, interior wall details, and interior wall types.
- i. Stair plans, sections, and details.
- j. If applicable, railing details.
- k. If applicable, reflected ceiling plan.
- 1. Millwork, kitchen and bathroom counters, vanity, shelving, and vanity details.
- m. Integrated interior finish and color schedule.
- n. Details listed in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes.
- o. Specifications.

## 2.10.2 Architectural Remaining Work Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

# 2.10.3 Interior Color Design for Remaining Work

Provide a generic color board. If sheet vinyl, ceramic tile, and resilient vinyl composition tile and laminate wood floor are to be used, provide actual samples and physical requirements data with interior color design submittal. The Contractor shall assume that consultation time with the Activity/User will be required prior to submitting color boards and that changes to the color scheme may occur after the color board submission. The Contractor shall provide three 8.5 inch by 11 inch binders containing material and finish color samples of all selected and approved materials. Any variations from these selections shall be submitted to the Contracting Officer for approval.

## 2.10.4 Fire Protection Design For Remaining Work

## a. Fire Protection Design

The Contractor's A&E is responsible in demonstrating that all fire protection requirements specified are being properly designed for the Government by including the necessary riser diagrams (sprinkler), points-of-connection, equipment floor plan locations, isometrics, elevation views, design detail sections, schematic one-line diagrams, control schematic diagrams, and all supporting hydraulic calculations. The drawings shall show all legend items and notes required to support the design and shall be specifically

identified as Fire Protection Sheets.

Sprinkler Riser Diagram shall include:

- (1) Building Water Supply.
- (2) Pressure/flow switches.
- b. Shop Drawings

For the fire protection systems, all submittals required by the technical sections specifying these systems shall be submitted to and approved by LANTNAVFACENGCOM Fire Protection Engineering before construction begins.

# 2.10.5 Fire Protection Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.10.6 Mechanical Design For Remaining Work

# 2.10.6.1 Mechanical Drawings

a. Heating, Ventilating and Air Conditioning Plans:

Show a functional layout of mechanical features such as equipment location, piping runs, ductwork, and all associated accessories. Provide details of all drawings required in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes. Include the following at the same scale as the architectural drawings:

- (1) Legend and symbols for each item indicated on the drawings.
- (2) Location of all mechanical equipment.
- (3) An enlarged scale layout (1:1/4" scale) for all mechanical rooms and access areas for maintenance, and removal of equipment, and filters, shall be shown dotted and labeled.
- (4) Indicate ductwork in a double line format including sizes in order to show sufficient space is available for ductwork and duct insulation.
- (5) Show all piping systems, including refrigerant and cooling coil condensate drains; indicate all pipe sizes and equipment.
- (6) Provide complete schedules for all equipment.
- a) Mechanical equipment schedules shall also include electrical characteristics of motor and packaged equipment; e.g., motor speed, voltage, full load amperes or minimum circuit

amperes, number of phases, horsepower, frequency, and motor starter size if not provided with the associated equipment.

- b) Integral disconnects, if provided, shall be noted in the mechanical equipment schedules and coordinated with the electrical drawings. Require integral disconnects be furnished with thermal overloads where appropriate for small fractional horsepower motors.
- (7) Schematic diagrams showing all piping systems including equipment.
- (8) Table for indoor and outdoor design conditions. Indicate by room or area if they differ.
- (9) Sections or elevations to supplement plan views at the same scale as the plan view.
- (10) Schematic diagrams to clarify plans and specifications.
- (11) Enlargement of plans (1:1/4" scale) in congested areas. Spacing must be sufficient for largest equipment meeting specification. All mechanical spaces shall be indicated by enlarged plans. Equipment and equipment layouts must allow for future removal/replacement without demolition, disassembly, or removal of building elements or other equipment intended to remain.
- (12) Area required for removal of filters shall be shown dotted and labeled.
- (13) If space is limited, show dotted in major equipment from other trades, for example, domestic hot water heater, or electrical panels.
- (14) Piping and equipment isometric layouts shall be included for all but the simplest systems.
- (15) Mechanical details available from the LANTNAVFACENGCOM homepage shall be used, and modified as required.
- (16) Duct construction; indicate each piece of air moving equipment with ductwork.
- (17) Design parameters for each item of equipment shall be indicated on the drawings including capacity, efficiency, sound ratings, motor speeds, electrical characteristics, and special features. Provide special corrosion protection in compliance with Section 15700, "Heating, Ventilating, and Cooling System", for condensers exposed to the weather.
- (18) If piping hangers and supports other than MSS-SP-58 and MSS-SP-69, Type 1 with adjustable steel support rods are used, design and construction details shall be indicated on the Contractor-originated design drawings.

(19) HVAC Testing/Adjusting/Balancing and Commissioning: Requirements for HVAC TAB work is specified in Section 15700, Heating, Ventilating, and Air Conditioning. The Contractor's designer shall indicate on the drawings (in addition to the duct class, seal class, and leakage class) the leakage test pressure to be used to test ductwork, or duct sections. Refer to SMACNA HVACDALTM, Appendix B, "Sample Leakage Analysis" for guidance in determining leakage test pressures.

# b. Plumbing Plans:

Showing fixture, equipment location, piping runs and all associated accessories. Include the following at the same scale as the architectural drawings:

- (1) Legend and symbols for each item indicated on the drawings.
- (2) Location of fixtures and associated equipment.
- (3) An enlarged scale layout(1:1/4" scale) of equipment rooms and typical toilet plans.
- (4) Provide complete fixture and equipment schedules.
- (5) Show domestic water piping system in riser or isometric form with sizes indicated.
- (6) Show sanitary waste, drain and vent systems in riser or isometric form with sizes indicated.
- (7) Plumbing details available from the LANTNAVFACENGCOM homepage shall be used, and modified as required.
- c. Detailed Requirements for Heating, Ventilating and Air Conditioning and Plumbing Drawings:
  - (1) Only drawings (not specifications) shall indicate capacity, efficiency, dimensions, sound ratings, special features, details, sections, elevations, and locations of fixtures and equipment; space required to replace strainers, filters, and for maintenance of equipment.
  - (2) Show location of wye strainer on building side of water supply valve in each building; indicate wye strainer blow-off outlet with piping to adjacent exterior wall hydrant. (Note: This will clean the strainer each time the wall hydrant is used.)
  - (3) Indicate on drawings which range or span is preferred for all thermometers and pressure gages.
  - (4) Following information shall be shown on project drawings:
  - a) A unique number or mark for each piece of equipment or terminal.

- b) Air quantities and temperatures in air handling unit schedules.
- 2.10.6.2 Mechanical Design Calculations

Submit complete design calculations.

- a. General Requirements Energy Budget and Heating, Ventilating, and Air Conditioning Load and Plumbing Calculations:
  - (1) Contractor shall use the latest version of CABO Model Energy Code MECcheck computer program using default settings for load calculations. Engineering calculations shall be neat, legible, logically ordered, bound and indexed. Design data shall be clearly stated. Formulas and reference sources shall be cited. Designers and checkers shall initial and date each computation sheet. Designers must submit with calculations:
  - (2) A description of the load program type(s) and configuration(s) used.
  - (3) Copies of all pertinent input and output data when using computerized design procedure.
  - (4) Documentation of each program may be requested, including a written summary of the program intent and function, assumptions, formulas, numerical methods used, nomenclature, limitations of the program, and references used in developing the program. In the event "non-proven" programs are used, a computer run by the designer of a check problem may be required by the government reviewer for verification at no expense to the Government.
- b. Energy Budget Calculations:
  - (1) The designer shall perform a computerized energy analysis using the latest version of CABO MECcheck computer program using the default settings.
  - (2) Each house shall be designed to meet the MECcheck computer program results.
- c. Heating, Ventilating and Air Conditioning and Plumbing Calculations:

Submit calculations based upon the final design.

- (1) Design reference manuals (List).
- (2) General equations and conversion factors.
- (3) Design conditions.
- (4) Building descriptive data (people, lights, construction data,

U-Valves, glazing).

- (5) Building air requirements (min. ventilation, exhaust, and outside air).
- (6) Heating and cooling load calculations.
- (7) Static pressure calculations.
- (8) Equipment sizing and selection (cut sheets).
- (9) Pipe sizing calculations.
- (10) Duct sizing.
- (11) Motor and electrical connection data.
- (12) Plumbing fixture selection.
- (13) Water heater selection.

## 2.10.6.3 Mechanical Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

## 2.10.7 Electrical Design For Remaining Work

# 2.10.7.1 Electrical Drawings

## a. Legend and Abbreviations

Provide legend and symbols for each item indicated on the drawings, and a listing of all abbreviations used on drawings with their meanings. Legend, symbols, and abbreviations shall be in accordance with attachments located in "Legends and Abbreviations" in the "Electrical Engineering Design Guide".

#### b. Floor Plans

(1) Provide a combined floor plan for lighting and power. Floor plans should also identify and indicate the location of panelboards, load center and special equipment such as telecommunications and CATV.

# c. Riser Diagrams

## (1) Power/Riser Diagrams:

(a) A power riser diagram is required for metering and service load center and shall show wire and conduit feeder sizes and ground provisions.

- (2) Telephone System Riser Diagram; include the following:
  - (a) Telephone outlets; include room name.
  - (b) Wiring for building system.
- (c) Service entrance; protectors for copper telephone cable,

terminators for fiber optic cable and patch panelsjunction box for connection by utility company.

- (3) CATV Riser Diagram; include the following:
  - (a) Building stub out and junction box for point of connection by local CATV service.
    - (b) Outlets include room names.
    - (c) Wiring for building system.
    - (d) Indicate and identify equipment and wiring provided by local CATV service.

#### d. Schedules

(1) Panelboard Schedules:

The schedules shall indicate all data necessary to completely describe each board.

Include any special requirements such as HACR (rated for air conditioning equipment) or GFI (ground fault circuit interrupter).

(2) Lighting Fixture Schedule:

Provide a lighting fixture schedule identifying each type of lighting fixture utilized. The schedule shall include the quantity and type of lamps, mounting and any additional information necessary. Use standard LANTNAVFACENGCOM lighting fixture sketches to the greatest extent possible. These sketches are available from the Contracting officer upon request, or are available on the Construction Criteria Base (NIBS CCB) in NFGS-16510, "Interior Lighting" and in NFGS-16520, "Exterior Lighting". Do not modify these LANTNAVFACENGCOM sketches; make modifications to sketches by means of notes in the fixture schedule.

When lighting fixtures other than the types shown on the LANTNAVFACENGCOM sketches are used, provide details and specifications similar to the LANTNAVFACENGCOM sketch format.

## e. Electrical Detailed Drawing Requirements:

(1) Grounding Systems

Provide grounding plans in accordance with NEC.

(1) Service for mechanical and other equipment

Show motor controllers and disconnect switches on the electrical drawings. Type of controller required (full voltage, multi-speed, NEMA size, and NEMA enclosure type) shall be shown on the mechanical equipment schedules.

f. Provide detail of all drawings required in the NAVFAC and LANTNAVFACENGCOM Guide Specification Criteria Notes

## 2.10.7.2 Electrical Design Calculations

Submit design calculations meeting the following requirements:

a. Designer Responsibility

The designer is responsible for calculations to verify proper design and operation of the facility to the point of connection to the utility electrical systems.

# b. Format

- (1) Assumptions and given data shall be clearly provided. Calculations shall be described fully and shall be written clearly.
- (2) Computer printouts are acceptable only if accompanied by explanations to allow adequate review of calculation methods and results.

# c. Required Calculations

- (1) Acquire available fault current data from the public utility and demonstrate that building over current protection devices are rated to properly interrupt same.
- (2) Lighting: Interior and exterior; provide interior lighting calculations keyed to the lighting floor plan and the lighting fixture schedule.
- (3) Load Analysis: Indicate connected load and demand load utilizing appropriate diversity and demand factors. Provide load calculations for branch circuits and feeders.

#### 2.10.7.3 Testing of Electrical Equipment and Commissioning

The requirements listed in the Guide Specification Sections for Electrical Equipment Testing supersede all Commissioning Requirements by the

Contractor's Commissioning Program.

# 2.10.8 Electrical Specification Submittal

The specification submittal shall include a Table of Contents, indicating specification name and number, and identification of database sources from which the specification was selected. Comply with the requirements specified in the paragraph entitled "Design Specifications".

# PART 3 EXECUTION - NOT USED

-- End of Section --

#### SECTION 01200

# PRICE AND PAYMENT PROCEDURES 09/00

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CORPS OF ENGINEERS (COE)

COE EP-1110-1-8

(1995) Construction Equipment Ownership and Operating Expense Schedule

#### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Schedule of prices; G

# 1.3 SCHEDULE OF PRICES

# 1.3.1 Data Required

The information required for the Schedule of Prices will be entered as an integral part of the Network Analysis Schedule (NAS) and its Mathematical Analysis. Within 15 calendar days of notice of award, prepare and deliver to the Contracting Officer a schedule of prices (construction contract) on the forms furnished by the Government. Provide a detailed breakdown of the contract price, giving quantities for each of the various kinds of work, unit prices, and extended prices therefor.

# 1.3.2 Construction Categories

The following construction categories apply to work covered by this specification:

CATEGORY DESCRIPTION

711-00 Housing Units

Divide detailed breakdown into each construction category, stated in this contract. Subcontractors who may be involved in work under more than one of these categories shall be advised of this requirement in order to furnish such data without delay. Construction categories given above may be modified by the Contracting Officer as necessary during course of work.

#### 1.3.3 Schedule Instructions

Payments will not be made until the Schedule of Prices has been submitted to and accepted by the Contracting Officer. Identify the cost for site work, and include incidental work to the 5 foot line. Identify costs for the building(s), and include work out to the 5 foot line. Work out to the 5 foot line shall include construction encompassed within a theoretical line 5 feet from the face of exterior walls and shall include attendant construction, such as cooling towers, placed beyond the 5 foot line.

## 1.4 CONTRACT MODIFICATIONS

In conjunction with the Contract Clause "DFARS 252.236-7000, Modification Proposals-Price Breakdown," and where actual ownership and operating costs of construction equipment cannot be determined from Contractor accounting records, equipment use rates shall be based upon the applicable provisions of the COE EP-1110-1-8.

#### 1.5 CONTRACTOR'S INVOICE

## 1.5.1 Content of Invoice

Requests for payment in accordance with the terms of the contract shall consist of the following:

- a. Contractor's Invoice on NAVFAC Form 7300/30, which shall show, in summary form, the basis for arriving at the amount of the invoice.
- b. Contractor's Monthly Estimate for Voucher (LANTNAVFACENGCOM Form 4-4330/110 (New 7/84)), with subcontractor and supplier payment certification.
- c. Affidavit to accompany invoice (LANTDIV NORVA Form 4-4235/4 (Rev. 5/81)).
- d. Updated copy of submittal register.
- e. Network mathematical analysis.
- f. Include Contractor's Final Release Form.

## 1.5.2 Quantities of Monthly Invoices and Supporting Forms

Forms will be furnished by the Contracting Officer. Requests for payment shall be processed in accordance with "FAR 52.232-5, Payments Under Fixed-Price Construction Contracts." Monthly invoices and supporting forms for work performed through the anniversary award date of the contract shall be submitted to the Contracting Officer within 5 calendar days of the date of invoice (e.g., contract award date is the 7th of the month, the date of each monthly invoice shall be the 7th and the invoice shall be submitted by the 12th of the month) in the following quantities:

a. Contractor's invoice - Original and five copies

- b. Affidavit Original
- c. Updated submittal register Two copies
- e. Network mathematical analysis Three copies

## 1.6 PAYMENTS TO THE CONTRACTOR

Payments will be made on submission of itemized requests by the Contractor which comply with the requirements of this section, and will be subject to reduction for overpayments or increase for underpayments made on previous payments to the Contractor.

## 1.6.1 Obligation of Government Payments

The obligation of the Government to make payments required under the provisions of this contract will, at the discretion of the Contracting Officer, be subject to reductions and/or suspensions permitted under the FAR and agency regulations including the following in accordance with "FAR 32.503-6:

- a. Reasonable deductions due to defects in material or workmanship;
- b. Claims which the Government may have against the Contractor under or in connection with this contract;
- c. Unless otherwise adjusted, repayment to the Government upon demand for overpayments made to the Contractor; and
- d. Failure to provide up to date record drawings not current as stated in Contract Clause "FAC 5252.236-9310, Record Drawings."

## PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01310

# ADMINISTRATIVE REQUIREMENTS 09/00

PART 1 GENERAL

#### 1.1 REFERENCES

Not used.

#### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

List of contact personnel; G

Progress and completion slides; G

#### 1.3 PROGRESS AND COMPLETION SLIDES

Provide monthly, and within one month of the completion of work, 35 millimeter color slides showing the sequence and progress of work. Take slides prior to the seventh day of each month from a minimum of ten views from points located by the Contracting Officer. Submit a sketch or drawing indicating points of view. Submit with the monthly invoice two sets of slides for each view in separate 3-ring binders with transparent slide holders. Progress slides and completion slides shall be submitted in electronic format. Cross reference submittals in the appropriate daily report.

### 1.4 MINIMUM INSURANCE REQUIREMENTS

Procure and maintain during the entire period of performance under this contract the following minimum insurance coverage:

- a. Comprehensive general liability: \$500,000 per occurrence
- b. Automobile liability: \$200,000 per person, \$500,000 per occurrence for bodily injury, \$20,000 per occurrence for property damage
- c. Workmen's compensation as required by Federal and State workers' compensation and occupational disease laws.
- d. Employer's liability coverage of \$100,000, except in States where workers compensation may not be written by private carriers,
- e. Others as required by State.

## 1.5 CONTRACTOR PERSONNEL REQUIREMENTS

#### 1.5.1 Subcontractors and Personnel

Furnish a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

# 1.5.2 Identification Badges

Identification badges, if required, will be furnished without charge. Application for and use of badges will be as directed. Immediately report instances of lost or stolen badges to the Contracting Officer.

## 1.5.3 Subcontractor Special Requirements

#### 1.5.3.1 Asbestos Containing Material

All contract requirements of Section 13281, "Engineering Control of Asbestos Containing Materials" assigned to the Private Qualified Person (PQP) shall be accomplished directly by a first tier subcontractor.

#### 1.6 SUPERVISION

Provide at least one (1) qualified Project Manager and one (1) on-site Project Superintendent per project capable of reading, writing, and conversing fluently in the English language. The Project Manager must have a minimum 10 years experience as a Project Manager or Superintendent on projects like this contract or similar in size and complexity. The Project Superintendent must have a minimum of 10 years experience as a Superintendent on projects similar in size and complexity.

## 1.7 PRECONSTRUCTION CONFERENCE

After award of the contract but prior to commencement of any work at the site, meet with the Contracting Officer to discuss and develop a mutual understanding relative to the administration of the value engineering and safety program, preparation of the schedule prices, shop drawings, and other submittals, scheduling programming, and prosecution of the work. Major subcontractors who will engage in the work shall also attend.

## 1.8 PARTNERING

LEVEL "A" PARTNERING In order to most effectively accomplish the contract, the Government plans to form a cohesive Partnership with the Contractor and its subcontractors. In addition, other key persons including the designer of record, Design/Build RFP preparer, Contractor's approved facility design team, principal individuals from the LANTNAVFACENGCOM, and the customer who will occupy the facility will also be invited to participate in the Partnering process. The Partnering will strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget, on schedule, and with the contractor making a fair profit. This Partnering will be bilateral in make-up and

participation is highly encouraged, but completely voluntary. The actual scope of the Partnership agreement is subject to bilateral agreement after award, but a preconstruction, off-site workshop of two days, and quarterly, or as needed one day follow-up sessions should be anticipated. Although subject to bilateral agreement before the initial workshop, it may prove beneficial to hold the Partnering meetings away from the normal commuting area to minimize interruptions during the daily sessions and allow the members of the Partnering to enhance working relationships through discussions and interaction. All participants should consider the cost of meals, lodging and transportation if an out of town site is selected. Participation by upper management is highly desirable and important. Costs associated with the Partnering effort including meeting room, audio visual accessories, costs of the facilitator, cost of refreshments and working meals will be shared equitably by the Government and the contractor. The cost of other meals, lodging, and transportation not directly associated with the formation and maintenance of the Partnership will be the responsibility of each of the Partnering participants.

## 1.9 AVAILABILITY OF CADD DRAWING FILES

After award and upon request, the electronic "Computer-Aided Drafting and Design (CADD)" drawing files will be made available to the Contractor for use in preparation of construction data related to the referenced contract subject to the following terms and conditions.

Data contained on these electronic files shall not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse shall be at the sole risk of the Contractor and without and without liability or legal exposure to the Government. The Contractor shall make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor shall, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

The electronic CADD drawing files are not construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CADD files, nor does it make representation to the compatibility of these files with the Contractors hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished CADD files, the signed and sealed construction documents shall govern. The Contractor is responsible for determining if any conflict exists. Use of these CADD files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check. confirm and coordinate the work of all contractors for the project.

If the Contractor uses, duplicates and/or modifies these electronic CADD files for use in producing construction data related to this contract, all previous indicators of ownership (seals, logos, signatures, initials and dates) shall be removed.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01321

# NETWORK ANALYSIS SCHEDULES (NAS) 09/00

## PART 1 GENERAL

#### 1.1 DESCRIPTION

Prepare a progress chart pursuant to the clause entitled "FAR 52.236-15, Schedules for Construction Contracts" of the Contract Clauses that shall consist of a network analysis system. The network analysis system shall consist of the network analysis schedule (diagram), mathematical analysis, and associated reports. The scheduling of all design, procurement and construction shall be the responsibility of the Contractor. Submission of progress and revision data will be used to measure work progress, aid to evaluate time extensions, and provide basis of all progress payments. The Critical Path Method (CPM) of network calculation shall be used to generate the project schedule and will utilize the Precedence Diagram technique to satisfy both time and cost applications. All progress payment amounts will be derived from and tied to the cost-loaded schedule activities.

#### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Standard Activity Coding Dictionary

Preliminary Network Analysis Schedule; G

Network Analysis Schedule; G

Accepted Network Analysis Schedule; G

SD-07 Certificates

Monthly Network Analysis Updates; G

SD-11 Closeout Submittals

# 1.3 SCHEDULE ACCEPTANCE

Review comments made by the Government on the Contractor's construction schedule will not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for scheduling, sequencing, and prosecuting the Work to comply with the requirements of the Contract Documents. Government acceptance extends only to the activities of the Contractor's schedule that the Government has been assigned responsibility for and agrees it is responsible. Comments offered on other parts of the schedule which the Contractor is assigned responsibility are

offered as a courtesy and are not conditions of government acceptance; but are for the general conformance with established industry schedule concepts.

# 1.3.1 Schedule Acceptance Prior to Start of Work

The design work may be started prior to submittal and acceptance of the Preliminary Network Analysis Schedule by the Government, but its acceptance will be a condition precedent to processing any pay requests submitted by the Contractor. The accepted Network Analysis Schedule described in the paragraph entitled "Accepted Network Analysis Schedule" must be submitted and accepted by the Government before the Contractor will be allowed to start work of the construction stage(s) of the contract.

## 1.3.2 Acceptance

- a. When the Preliminary Network Analysis Schedule is submitted and accepted by the Contracting Officer, it will be considered the "Baseline CPM Schedule for Design". When the Accepted Network Analysis Schedule is submitted and accepted by the Contracting Officer, it will considered the "Baseline CPM Schedule". The Baseline CPM Schedule will then be used by the Contractor for planning, organizing, and directing the work; reporting progress; and requesting payment for work accomplished. The schedule will be updated monthly by the Contractor and submitted monthly with the progress pay request to reflect the current status of the work. The submittal and acceptance of the Accepted Network Analysis Schedule and accurate updated schedules accompanying the pay requests are both conditions precedent to processing pay requests. Only bonds will be paid prior to acceptance of the Accepted Network Analysis Schedule.
- b. Submittal of the Network, and subsequent schedule updates, will be understood to be the Contractor's representation that the submitted schedule meets all of the requirements of the Contract Documents, accurately reflects the work accomplished, and that Work will be executed in the sequence indicated on the submitted schedule.

## 1.4 SOFTWARE

The scheduling software that will be utilized by the government on this project is SureTrak by Primavera Systems, Inc. The software will be the most current version available and will be compatible with all MS-Windows operating systems (e.g., Win NT, Win 95, etc.). The scheduling software package shall contain all user manuals normally provided by the software distributor. If the Contractor upgrades their software during the course of the contract, the upgrade shall also be provided to the Contracting Officer. The software will remain the property of the government.

## 1.4.1 Computer Hardware

The network analysis software shall be capable of running on a Contractor provided personal computer. All necessary software and hardware will be provided to make the system a complete and useable package. Provide a

printer with necessary cables. The Contractor PC will remain the property of the Contractor.

#### 1.5 NETWORK SYSTEM FORMAT

The system shall consist of time scaled logic diagrams accompanying mathematical analyses and specified reports.

### 1.5.1 Diagrams

Show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the completion of preceding activities and how its completion restricts or restrains the start of following activities. Diagrams shall be organized by Work Phase, Area Code and sorted by Early Start Date and will show a continuous flow from left to right with no logic (relationship lines) from right to left. With the exception of the Project Start and Project Completion milestone activities, no activities will be open-ended; each activity will have predecessor and successor ties. diagram shall clearly show the activities of the critical path. No onsite construction activity shall have duration in excess of 20 working days. Once an activity exists on the schedule it may not be deleted and must remain in the logic. No more than 20 percent of the activities may be critical or near critical. Critical will be defined as having zero days of Total Float. "Near critical" will be defined as having Total Float in the range of 1 to 14 days. Show the following information on the diagrams for each activity:

- a. Activity/Event Number
- b. Activity Description
- c. Original Duration in work days
- d. Actual Duration in Work Days
- e. Early Start Date
- f. Early Finish Date
- g. Total Float (or Slack)
- h. Responsibility Code

Provide network diagrams on ANSI E sheets. Updated diagrams shall show the date of the latest revision.

# 1.5.2 Numbering of Activities

Numbering shall be assigned so that, in general, predecessor activity numbers are smaller numerically than the successor activity numbers. Skip numbering shall be used on the network to allow insertion of additional activities for contract modifications and logic changes. Types of

activities included in the schedule are specified below.

## 1.5.2.1 Design Activities

Requirements for the activities related to Pre-Design and Design shall be included as separate activities in the project schedule. Examples of design activities include, but are not limited to, the Design Notice to Proceed, Contractor's various stages of design, application for and receipt of permits required, Contractor's constructability reviews, submittal of design packages to Government, Government's design review period, specified design meetings, transition periods prior to Construction Notice to Proceed, etc. The Government review period will be from the time the design is received by the Government to the time it is sent back to the Contractor; mail time will not be included in the Government review period. Design activities will be linked to their associated Procurement and/or Construction Activities.

If the Government's action on any submittal is "Disapproved" or "Revise and Resubmit", a new series of Design Activities will be inserted into the schedule. Predecessor for the new design preparation activity will be the original approval activity and the successor of the new approval activity will be the next design step (in-progress or final) activity.

#### 1.5.2.2 Procurement Activities

Tasks related to the procurement of material or equipment shall be included as separate activities in the project schedule. Examples of procurement activities include, but are not limited to: Material/equipment submittal preparation, submittal and approval of material/equipment; delivery of O&M-01-2 manuals; material/equipment fabrication and delivery, delivery of extra parts, extra stock, special tools, notification of Government Furnished Material/Equipment delivery requirement, etc. As a minimum, separate procurement activities will be provided for every specification section. If the Contractor intends on using Just-In-Time (JIT) delivery methods, the schedule will show each JIT delivery with relationship tie to the Construction Activity specifically for the JIT delivery. Material and equipment for which payment will be requested in advance of installation shall be included in the schedule of prices with the procurement costs. All activities within a procurement process/cycle will have a unique identifier in the activity code to show their relationships and will extend to the related construction activities (i.e., Work Category).

If the Government's action on any submittal is "Disapproved" or "Revise and Resubmit", a new series of Procurement Activities will be inserted into the schedule. Predecessor for the new submittal preparation activity will be the original approval activity and the successor of the new approval activity will be the fabrication/deliver activity for the equipment or material.

## 1.5.2.3 Government Activities

Government and other agency activities that could impact progress shall be clearly identified. Government activities include, but are not limited to; Government approved submittal reviews, Government conducted

inspections/tests, utility outages, Notice(s) to Proceed and delivery of Government Furnished Material/Equipment. Show activities indicating Government furnished materials and equipment utilizing delivery dates indicated in "FAR 52.245-2, Government Property (Fixed-Price Contracts)." Government activities will be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

#### 1.5.2.4 Construction Activities

Construction activities shall include, but are not limited to: Tasks related to mobilization/demobilization; the installation of temporary or permanent work by tradesman; testing and inspections of installed work by technicians, inspectors or engineers; start-up and testing of equipment; commissioning of building and related systems; scheduling of specified manufacture's representatives; final clean-up; training to be provided; and administrative tasks necessary to start, proceed with, accomplish or finalize the contract. Contractor activities will be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

## 1.5.2.5 Anticipated Weather Delays

Schedule activity duration(s) shall be formulated with allowance for normal adverse weather conditions. Any activity duration which could be impacted by normally anticipated adverse weather (precipitation, high or low temperature, wind, etc.), due to the time period which the Contractor has scheduled the work, shall include an adjustment to include the anticipated weather delay. The Contractor shall anticipate delay by comparing the contractually imposed environmental restrictions in the Contract Documents to the National Oceanic and Atmospheric Association's (NOAA) historical monthly averages for the NOAA location closest to the project site. The number of anticipated adverse weather delays allocated to an activity will be reflected in the activity's calendar. A lost workday, due to weather conditions, is defined as a day in which the Contractor's workforce cannot work 50 percent or more of the day. The Contractor shall immediately notify the Contracting Officer when a lost day has occurred due to weather and will record on the Daily Reports, the occurrence of adverse weather and resultant impact to the normally scheduled work. If the number of actual adverse weather delay days exceeds the number of days anticipated, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days and issue a modification in accordance with the contract clauses.

## 1.5.2.6 Activity Properties

Schedule activities will have the following properties:

a. Standard Activity Coding Dictionary: The Contractor shall submit a coding scheme for Schedule Activity Numbers that shall be used throughout the project. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. Code length shall not exceed 10 characters. Once accepted, the coding scheme will be used for the duration of the project.

- b. Activity Description: Each activity shall have a narrative description consisting of a Verb or work function (e.g.; form, pour, excavate), an Object (e.g.; slab, footing, underfloor plumbing), and Area (e.g.; 2nd floor, northeast quadrant, bedroom).
- c. Work Phase: If phasing is specified in the contract, all activities shall be identified in the project schedule by the phase of work in which the activity occurs. Activities shall not be contained in more than one Work Phase.
- d. Work Category: All Activities shall be identified in the project schedule according to the work category which best describes the activity. Examples of work categories are procurement, government, and construction activities that are all related to a single Definable Feature of Work. Activities shall not be contained in more than one Work Category.
- e. Area Code: All activities shall be identified in the project schedule by the Area Code in which the activity occurs.

  Activities shall not be contained in more than one Area Code.

  Area is defined as a distinct separation in construction, such as a story of construction, separate structure, usage or function difference, utility distribution systems, etc.
- f. Responsibility Code: All activities in the project schedule shall be identified with the party responsible to perform the task. Responsibility includes, but is not limited to; the prime contractor, subcontracting firm, or Government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by a responsibility code. For example, a responsibility code value, "ELEC", may be identified as "Electrical Subcontractor."
- g. CSI Code: All activities in the project schedule shall be identified with its respective 5-digit Specification Section number. Activities shall not belong to more than one Section number. If an activity does not have an applicable CSI Code, (such as "Mobilize"), the code will be "00000".
- h. Drawing Code: All activities in the project schedule shall be identified with its respective project drawing code. The drawing code is the Sheet Number on the primary project drawing which indicates the work to be performed. Activities shall not belong to more than one Drawing Code. Examples of Drawing Codes are "C-10", "C.10" or "C10". The code system will allow organizing all activities by drawing code in alpha and numeric order. If an activity does not have an applicable Drawing Code, (such as "Mobilize"), the code will be "00000".
- i. Modification Code: The Modification Code shall identify activities that are modified or added by contract modification. Activities shall not belong to more than one Modification Code. The Government will assign the modification number, which will be

- shown on the SF 30. Use a shortened version of the modification number for the code (e.g.; A00010 = 010).
- j. Request for Equitable Adjustment (REA) or Claim Code: Activities that are modified or added, as a result of a Contractor's REA or Claim shall be identified by a code generated by the Contractor. Activities shall not belong to more than one REA or Claim Code.
- k. The Three Phases of Control (Preparatory, Initial, and Follow-up):
  For each Definable Feature of Work identified in the Contractor's
  Quality Control Plan, include an activity for the Preparatory
  Phase. The Initial Phase and Follow-up Phase will be represented
  by the Construction Activities in the schedule.
- 1. Project Milestone Dates: Dates shall be shown on the diagram for the start of the project, any contract required interim start and completion dates, contract completion date and other significant milestones.
- m. Scheduled Project Duration: The schedule duration shall extend from notice-to-proceed to the contract completion date.
- n. Project Start Date Milestones: The schedule shall start no earlier than the contract award date and the project duration (Day 1) will start on the Notice-to-Proceed (NTP) date. The Contractor shall include as the first activity in the schedule, an activity named "Contract Award" and another activity on the NTP date named "Start Project". Both activities will be zero duration, with constrained start dates equal to the contract award and NTP dates.
- o. Constraint of Last Activity Milestone: The Contractor shall include as the last activity in the project schedule, an activity named "End Project". The "End Project" activity shall be zero duration with a mandatory finish constraint equal to the contract completion date for the project. Calculation of project updates shall be such that if the finish of the last activity falls after the contract completion date, then the float calculation shall reflect negative float on the critical path.
- p. Early Project Completion: In the event the Contractor's project schedule shows completion of the project prior to the contract completion date, the Contractor shall include an activity named "Contractor Early Completion". The activity shall be a zero duration milestone with an unconstrained date representing the Contractor's Early Completion date.
- q. Substantial Completion: If the Contractor elects to include an activity for Substantial Completion, then it is agreed that Substantial Completion will be the point in time that the Government considers the project is complete and ready for its intended use. The activity will be named "Substantial Completion". The activity shall be a zero duration milestone with an unconstrained date representing the Contractor's Substantial Completion date.

- r. Phase Start Milestone: The Contractor shall include as the first activity for a project phase, an activity named "Start Phase X", where "X" identifies the phase of work. The "Start Phase X" activity shall be zero duration with an unconstrained start date equal to the date of the Phase NTP. This unconstrained start date is not a release from contractually required start dates, but is left unconstrained to allow the schedule logic to calculate without hindrance.
- s. End Phase Milestone: The Contractor shall include as the last activity in a project phase, an activity named "End Phase X" where "X" identifies the phase of work. The "End Phase X" activity shall be zero duration with an unconstrained late finish date equal to the contract phase completion date. This unconstrained completion date is not a release from contractually required finish dates, but is left unconstrained to allow the schedule logic to calculate without hindrance.
- t. Early Phase Completion: If the Contractor expects to finish prior to the contract phase completion date, the milestone will show an early finish date equal to the Contractor's early finish date. The name of the activity will be "Early Phase Completion" and will be zero duration with an unconstrained date representing the Contractor's early phase completion date.
- u. Summary (a.k.a., Banding or Hammock) Activities: The Contractor shall include special activities that are a summary of a chain of activities. The start of the activity will be the start date of the first activity in the chain and the finish date will be the finish date of the last activity in the chain. Generalized work sequences, Categories of Work and all Phase of Work activity chains will be summarized.
- v. Activity/Event Constraints: Date/time constraint(s), other than those required by the contract, will not be allowed unless accepted by the Contracting Officer.
- w. Leads and Lags: Leads or lags will not be used when the creation of an activity will perform the same function (e.g., concrete cure time). Lag durations contained in the project schedule shall not have a negative value. The use of any lead or lag will be explained in the Narrative Report.
- x. Default Progress Data Disallowed: Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in the CPM scheduling software system. Actual Start and Actual Finish dates on the CPM schedule shall match the dates provided from Contractor Quality Control and Production Reports. These reports will be the sole basis for updating the schedule. Work activities will be updated by actual work progression rather than being cash flow driven. The updating of the percent complete and the remaining duration of any activity shall be independent functions; program features that calculate one of these parameters

from the other shall be disabled. Out-of-Sequence progress (if applicable) shall be handled through Retained Logic, not the Default Option of Progress Override. Actual labor and equipment hours used on activities will be derived from the daily reports.

# 1.5.3 Mathematical Analysis

The network diagram mathematical analysis shall include a tabulation of each activity shown on the detailed network diagrams. Provide the following information as a minimum for each activity:

- a. Activity/Event number
- b. Activity/Event description
- c. Estimated duration of activities (by work days)
- d. Earliest start date (by calendar date)
- e. Earliest finish date (by calendar date)
- f. Actual start date (by calendar date)
- g. Actual finish date (by calendar date)
- h. Latest start date (by calendar date)
- i. Latest finish date (by calendar date)
- i. Total float or slack
- k. Material/Equipment costs will be assigned to their respective Procurement Activities (i.e., the delivery activity). Costs for installation of the material/equipment (labor, construction equipment, and temporary materials) will be assigned to their respective Construction Activities. The value of inspection/testing activities will not be less than 10 percent of the total costs for Procurement and Construction Activities. Evenly disperse overhead and profit to each activity over the duration of the project.
- Responsibility code (including prime contractor, subcontractors, suppliers, Government, or other party responsible for accomplishment of an activity.)
- m. Area Code
- n. Manpower required (crew size)
- o. Percentage of activity duration completed
- p. Contractor's earnings based on accepted work-in-place.

The program or means used in making the mathematical computation shall be

capable of compiling the total value of completed and partially completed activities. The program shall also be capable of accepting revised completion dates as modified by approved time extensions and recompilation of tabulation dates/costs and float accordingly. The total of all cost loaded activities; including costs for material and equipment delivered for installation on the project, and manpower and construction equipment loaded construction activities, shall total to 100 percent of the value of the contract.

# 1.5.4 Required Reports

The following reports will be made available in the schedule submittals and in each updated schedule submission provided on disk by the Contractor:

- a. By the preceding event number from lowest to highest and then in the order of the following activity number (Activity Identification Report) showing the current status of all activities.
- b. By the amount of total float, from lowest to highest and then in order of activity number (Total Float or Slack Report) showing all incomplete activities.
- c. By latest allowable start dates and then in order of activity numbers (Late Start Report).
- d. Earned Value Report listing all activities having a budget amount and cost. A compilation of total earnings on the project from the notice to proceed to the most recent monthly progress payment request and the difference between the previous request amount and the current payment request amount. Sort report first by resource and then by activity.
- e. By earliest allowable start dates and then in order of activity number (Early Start Report).
- f. By tasks scheduled to start and finish by the end of the next pay period (30-Day Look Ahead).
- g. With each updated schedule submission, provide a computer generated Log Report using a recognized schedule comparison software listing all changes made between the previous schedule and current updated schedule. Identify the name of the previous schedule and name of the current schedule being compared. This report will as a minimum show changes for: Added & Deleted Activities, Original Durations, Remaining Durations, Activity Percent Complete, Total Float (or Slack), Free Float, Calendars, Descriptions, Constraints (added, deleted or changed), Actual Starts/Finishes, Added/Deleted Resources, Resource Quantities, Costs, Resource Percents, Added/Deleted Relations, Changed Relation Lags, Changed Driving Relations, and Changed Critical Status.
- h. By the activity number from lowest to highest, showing preceding

and succeeding activity numbers for each activity (Predecessor/Successor Report), and showing the current status of each activity.

## 1.6 SUBMISSION AND ACCEPTANCE

### 1.6.1 Preliminary Meeting

Before the start of design and/or construction, a meeting between the Contracting Officer, Contractor, Design Quality Control Manager, the design consultants and/or major subcontractors shall participate in a preliminary meeting to discuss the proposed schedule and requirements of this section prior to submission of the network. The definition of a "major subcontractor" is one that exceeds 5 percent of the contract value.

# 1.6.2 Preliminary Network Analysis Schedule

Submit a preliminary network defining the planned operations during the design stage(s) of the contract. The general (summarized) approach for the construction stage(s) of the project shall be indicated. Cost of activities expected to be invoiced during the design stage shall be loaded into the schedule and will not exceed the allowable costs for design, stated elsewhere in the contract documents. Submit three copies of both the preliminary network diagrams and required reports listed in paragraph entitled "Required Reports." In accordance with paragraph entitled "Monthly Reports," the preliminary network may be used for requesting progress payments for a period not to exceed the design stage of the contract. Submittal and acceptance of the Preliminary Network is condition precedent to the processing of the Contractor's pay requests on this schedule. Payment requests for the construction stage of this contract shall be based upon the Accepted Network Analysis Schedule. The activities and relationships of the preliminary schedule shall coincide and mesh with the activities of the Network Analysis Schedule. As part of this submittal, provide the Project Name format (and Project Group Name if used) that will be used by the Contractor to identify initial schedule submittals, updates, fragnets, changes, etc. Include 1 copy of the Preliminary Network Analysis Schedule on 3.5" disk(s).

# 1.6.3 Network Analysis Schedule

Submit the complete network system, consisting of the network mathematical analysis and network diagrams, within 40 calendar days after contract award. Submit three copies of the diagrams described in the paragraph entitled "Diagrams", the required reports listed in the paragraph entitled "Required Reports ", and the analysis described in the paragraph entitled "Mathematical Analysis" and information required by the paragraph entitled "Additional Requirements". As part of this submittal, provide the Project Name format (and Project Group Name if used) that will be used by the Contractor to identify initial schedule submittals, updates, fragnets, changes, etc. Include 1 copy of the Network Analysis Schedule on 3.5" disk(s) formatted to hold 1.44 MB of data.

## 1.6.4 Review and Evaluation

After the Government's review, the Contractor shall meet with the Contracting Officer to discuss the review and evaluation of the NAS submittal. Revisions necessary as a result of this review shall be resubmitted for acceptance within 10 calendar days after the meeting.

# 1.6.5 Accepted Network Analysis Schedule

Once review comments are resolved and the network has been accepted by the Contracting Officer, the Contractor shall within 5 calendar days furnish:

- a. Two copies of the network diagrams
- b. Two copies of the required reports listed in paragraph entitled "Required Reports"
- c. Two copies of the "Mathematical Analysis".
- d. Two copies of the Cash Flow Report indicating the cash flow based upon both the early and late start schedules.
- e. Two copies of each major subcontractor's statement certifying their concurrence with the Contractor's Accepted Network Analysis Schedule. Each certifying statement will be made on the subcontractor's letterhead.
- f. Two sets of data disks containing the project schedule shall be provided for the initial submission and every periodic project update. Data shall be submitted on 3.5: disk(s), formatted to hold 1.44 MB of data. A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, NAS Submittal, Accepted, Update, Recovery, or Change), full contract number, Project Name used to identify project in scheduling software, contract name & location, data status date, diskette number with total number of diskettes in set, software name and version used to run the schedule, and the name and telephone number of person responsible for the schedule.

For major revisions, updates or changes to the network diagrams, once accepted by the Contracting Officer, the Contractor shall submit these same diagrams and reports.

## 1.6.6 Monthly Network Analysis Updates

At monthly intervals the Contractor, Government representatives, design consultants, and major subcontractors will meet to jointly update the project schedule and agree on percentage of payment for each activity progressed during the update period. The purpose of the meeting is to determine progress payment amounts for each activity, allow all parties to evaluate project status at the data date, provide a complete and accurate update of design, procurement, and construction progress, create an historical record of the project and establish prediction of completion date(s) based upon current status. The Contractor is responsible to gather all supporting documentation propose the update data for the schedule and record the meeting minutes. All progress payment amounts will be derived

from and tied to the cost-loaded schedule activities. Submit at monthly intervals a report of the actual construction progress by updating the required reports, the time scaled logic diagram, and mathematical analysis. Meeting to update the schedule and the submission of an error free, acceptable updated schedule to the Government is a condition precedent to the processing of the Contractor's pay request. As a minimum, the following actions will be accomplished during the meeting:

- a. Identify activities started and completed during the previous period and enter the Actual Start and Actual Finish dates.
- b. Show estimated duration (in workdays) to complete each activity started but not completed (remaining duration).
- c. Indicate percentage of cost payable for each activity.
- d. Reflect changes in the network diagram. All changes (i.e., duration changes, logic changes, new logic, conformed change orders, new activities, changes due to Conformed Modifications, changes in work sequence, etc.) shall be recorded and a note added to the activity log field. The log shall include as a minimum, the date and reason for the change, and description of the change.
- e. Submit two copies of a Narrative Report describing: 1) Progress made in each area of the project; 2) Changes in the following; activities, original durations, logic interdependencies, milestones, planned sequence of operations, critical path, and resource and loading; 3) Pending items and status thereof, including permits, change orders, and time extensions; 4) Status of Contract Completion Date and interim milestones; 5) Current and anticipated delays (describe cause of the delay and corrective action(s)); and 6) Description of current and future schedule problem areas. Each entry in the narrative report will cite the respective Activity ID and Activity Description.
- f. Submit two copies of the required reports listed in paragraph entitled "Required Reports".
- g. Submit two copies of the Update Meeting minutes.

# 1.6.7 Summary Network

A summary network shall have the same network form as the Accepted Network Analysis Schedule. The summary network will contain a minimal number of activities that represent the general approach of work sequence. The Summary will be a time-scaled logical sequence of Work Phases, Work Category, and Area Code. The Contractor shall submit a summary network diagram immediately after acceptance of the Accepted Network Analysis Schedule. A summary network update shall be submitted every 6 months during the contract duration and immediately following acceptance of each major schedule change. Submit the following:

a. Two copies of the summary network diagram.

- b. Two copies of the Activity Identification Report.
- c. Two copies of the Total Float (or Slack) Report.
- d. Two copies of the Earned Value Report indicating the actual cash flow for the current updated (not summary) network based upon both the early and late start schedules.

### 1.7 CONTRACT MODIFICATION

When a contract modification to the work is required, submit proposed revisions to the network with a fragnet and a cost proposal for each proposed change. All modifications shall be incorporated into the network analysis system as separately identifiable activities broken down and inserted appropriately on the first update following issuance of a directive to proceed with the change. Submit one copy of the Total Float Report, Log Report and a copy of the proposed Time Impact Analysis on disk, with the cost proposal. Unless the Contracting Officer requests otherwise, only conformed contract modification fragnets will be added into the subsequent monthly updates. All revisions to the current baseline schedule activities that are necessary to further refine the schedule so that the changed work activities can be logically tied to the schedule shall be made. Financial data shall not be incorporated into the schedule until the contract modification is signed by the Contracting Officer.

# 1.7.1 Time Impact Analysis:

Time Impact Analysis shall be used by the Contracting Officer in determining if a time extension or reduction to the contract milestone date(s) is justified. The Contractor shall provide a Time Impact Analysis to the Contracting Officer for any proposed contract change or as support for a Value Engineering Proposal, Claim or Request for Equitable Adjustment by the Contractor.

- a. The Contractor shall submit a Time Impact Analysis (TIA) illustrating the influence of each change or delay on the Contract Completion Date or milestones. Unless the Contracting Officer requests an interim update to the schedule, the current monthly updated schedule accepted by the government shall be used to display the impacts of the change. Unless requested by the Contracting Officer, no other non-conformed changes will be incorporated into the schedule being used to justify the change impact.
- b. Each TIA shall include a Fragmentary Network (fragnet) demonstrating how the Contractor proposes to incorporate the impact into the Project Schedule. A fragnet is defined as the sequence of new activities and/or activity revisions, logic relationships and resource changes that are proposed to be added to the existing schedule to demonstrate the influence of impacts to the schedule. The fragnet shall identify the predecessors to the new activities and demonstrate the impacts to successor activities. Include a narrative report describing the effects of new activities and relationships to interim and contract

completion dates, with each TIA.

c. Following the Contractor's receipt of a contract modification on a Standard Form 30 signed by the Government; all changes in the fragnet used to determine impacts, shall be incorporated into the schedule. Changes will occur during the next monthly schedule update meeting.

### 1.7.2 No Reservation-Of-Rights

All direct costs, indirect costs, and time extensions will be negotiated and made full, equitable and final at the time of modification issuance.

## 1.8 CHANGES TO THE NETWORK ANALYSIS SCHEDULE

If changes in the method of operating and scheduling are desired, the Contracting Officer shall be notified in writing stating the reasons for the change. If the Contracting Officer considers these changes to be of a major nature, the Contractor may be required to revise and submit for acceptance, without additional cost to the Government, the network diagrams and required sorts. A change may be considered of a major nature if the estimated time required or actually used for an activity or the network logic is varied from the original plan to a degree that there is a reasonable doubt as to the effect on the contract completion date(s) or phase completion dates. Changes that affect activities with adequate float time shall be considered a major change when their cumulative effect could extend the contract completion date.

# 1.9 FLOAT

Use of float suppression techniques, such as; preferential sequencing (arranging critical path through activities more susceptible to government caused delay), special lead/lag logic restraints, zero total or free float constraints, extended activity times, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates. The use of Resource Leveling (or similar software features) used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

#### 1.9.1 Definitions of Float or Slack

Free Float is the length of time the start of an activity can be delayed without delaying the start of a successor activity. Total Float is the length of time along a given network path that the actual start and finish of activity(s) can be delayed without delaying the project completion date. Project Float is the length of time between the Contractor's Early Completion (or Substantial Completion) and the Contract Completion Date.

## 1.9.2 Ownership of Float

Float available in the schedule, at any time shall not be considered for the exclusive use of either the Government or the Contractor. During the course of contract execution, any float generated due to the efficiencies of either party is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated weather is less than expected, will also contribute to the reserve of float. A schedule showing work completing in less time than the Contract time, and accepted by the Government, will be considered to have Project Float. Project Float will be a resource available to both the Government and the Contractor. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the Project's critical path, consumes all available float or contingency time, and extends the work beyond the Contract Completion Date.

## 1.9.3 Negative Float

Negative float will not be a basis for requesting time extensions. Any extension of time will be addressed in accordance with the Paragraph "Time Extensions". Scheduled completion date(s) that extend beyond the contract or phase completion date(s) (evidenced by negative float) may be used in computations for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

## 1.10 TIME EXTENSIONS

Extension of time for performance required under the clauses entitled "Changes," "Differing Site Conditions," "Default (Fixed-Price Construction)" or "Suspension of Work" will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total float or slack along the network paths involved at the time Notice to Proceed was issued for the change. The Contractor acknowledges and agrees that delays in activities which, according to the network analysis schedule, does not in fact actually affect any milestone completion dates or the contract completion date shown on the CPM network at the time of delay, will not be a basis for a contract extension. Submit time extension requests with a Time Impact Analysis and three copies of the Total Float (or Slack) Report, Narrative Report and Log Report.

# 1.11 MONTHLY COORDINATION MEETING

In conjunction with receipt of the Monthly Network Update submission, a coordination meeting will be held each month in the Contracting Officer's conference room to discuss the report. The Contractor shall make a presentation of the previously submitted and current Monthly Network Update to the Contracting Officer so as to provide an overview of the project's schedule and provide an opportunity to discuss items of coordination.

# 1.12 BIWEEKLY WORK SCHEDULE

To provide a more detailed day-to-day planning of upcoming work, the Contractor shall prepare and issue detailed work plans that coordinate with and supplement the above defined network analysis. The work plans shall be keyed to the CPM activity numbers and shall be submitted each week and shall show the projects activities that will occur during the following two-week interval. Additionally, the critical path activities are to be

identified on the Biweekly Work Plan. The detail work plans are to be bar chart type schedules prepared by the Contractor in sufficient detail to define the work to be accomplished, the crews, construction tools and equipment to be used during the current and next two-week interval. The bar charts shall be formatted to allow reproduction on 8 1/2 by 11 sheets. Three copies of the bar chart schedules shall be delivered to the Contracting Officer not less than 3 work hours prior to the start of the weekly coordination meeting.

## 1.13 WEEKLY COORDINATION MEETING

In conjunction with the receipt of the Bi-Weekly Work Schedule, a coordination meeting will be held each week in the Contracting Officer's conference room to discuss the work schedule. The Contractor shall make a presentation of the previously submitted and current Bi-Weekly Work Schedule to the Contracting Officer so as to provide an overview of the project's schedule and provide an opportunity to discuss items of coordination. Consideration of materials, crews, and equipment shall be addressed to ascertain their respective availability. The meeting shall identify actions necessary to provide adherence to the Bi-Weekly Work Schedule and the overall network for the project defined above. The Contractor will take meeting minutes. All meeting minute entries will be keyed to the schedule activity number(s) being addressed. Within one day of the meeting, the Contractor will provide a draft copy of the meeting minutes to the Contracting Officer for review and comment. Final copies of the minutes containing the comments provided by the Contracting Officer, will be issued within 3 days of the meeting.

# 1.14 CORRESPONDENCE AND TEST REPORTS

All correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minutes, Production and QC Daily Reports, material delivery tickets, photographs, etc.) shall reference the Schedule Activity Number(s) that are being addressed. All test reports (e.g., concrete, soil compaction, weld, pressure, etc.) shall reference the Schedule Activity Number(s) that are being addressed.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01330

# SUBMITTAL PROCEDURES 03/00

#### PART 1 GENERAL

#### 1.1 SUMMARY

## 1.1.1 Submittal Requirements

Except as specified otherwise, this section covers the requirements for RFP Division 01 administrative submittals and post-design construction submittals, which are submittals required of the Contractor by the technical sections after approval of the construction design documents. This section only applies to those submittals required by the RFP bid documents. Except as specified otherwise in this section and in Section 01450, "Quality Control", all other submittals and submittal procedures shall be the responsibility of the Contractor and shall be outlined by the Contractor in a "Submittal Review and Approval Plan and Log." This plan and log shall be delivered to the Contracting Officer and shall include the following:

- a. Method proposed to track the Contractor's submittals.
- b. Complete list of required submittals and corresponding specification sections, submittal and review dates, record of review actions and tracking history.

Submittal requirements for the construction design documents are specified in Section 01160, "Design Documents."

## 1.1.2 Government-Furnished Information

Submittal register database and submittal management program will be delivered to the Contractor, by Contracting Officer on 3 1/2 inch disk. Register databasewill have the following fields completed, to the extent that will be required by the Government during subsequent usage.

- Column (c): Lists specification section in which submittal is required.
- Column (d): Lists each submittal description (SD No. and type, e.g. SD-04 Drawings) required in each specification section.
- Column (e): Lists one principal paragraph in specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting project requirements.
- Column (f): Indicate approving authority for each submittal. A "G" indicates approval by Contracting Officer; a blank indicates approval by QC manager.

The database and submittal management program will be extractable from the disk furnished to Contractor, for operation on Contractor's IBM compatible personal computer with 640kb RAM, a hard drive, and 3 1/2 inch high density floppy disk drive.

#### 1.2 DEFINITIONS

#### 1.2.1 Submittal

Shop drawings, product data, samples, and administrative submittals presented for review and approval. Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

## 1.2.2 Types of Submittals

All submittals are classified as indicated in paragraph "Submittal Descriptions (SD)". Submittals also are grouped as follows:

- a. Shop drawings: As used in this section, drawings, schedules, diagrams, and other data prepared specifically for this contract, by Contractor or through Contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.
- b. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.
- c. Samples: Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.
- d. Administrative submittals: Data presented for reviews and approval to ensure that administrative requirements of project are adequately met but not to ensure directly that work is in accordance with design concept and in compliance with contract documents.

## 1.2.3 Submittal Descriptions (SD)

## SD-01 Preconstruction Submittals

Certificates of insurance Surety bonds List of proposed subcontractors List of proposed products Construction Progress Schedule Submittal schedule Schedule of values
Health and safety plan
Work plan
Quality control plan
Environmental protection plan

#### SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

#### SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

## SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

## SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

# SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

#### SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

#### SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

#### SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

#### SD-10 Operation and Maintenance Data

Data intended to be incorporated in operations and maintenance manuals.

## SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

As-built drawings

Special warranties

Posted operating instructions

Training plan

## 1.2.4 Approving Authority

Person authorized to approve submittal.

#### 1.2.5 Authorized Reviewer

The authorized reviewer shall be a Registered Architect or Engineer employed by the Contractor's Designer of Record. The term "Designer of Record" shall mean that the firm that prepared the construction design documents and employed the Registered Architect or Engineer who sealed those design documents to which the submittal relates. The task of this reviewer is to verify technical acceptability of all submittals for which the Contractor is the approving authority.

#### 1.2.6 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce construction and materials, products, equipment, and systems incorporated or to be incorporated in such construction.

#### 1.3 SUBMITTALS

Submit the following in accordance with the requirements of this section.

SD-11 Closeout Submittals

Submittal register; G

#### 1.4 USE OF SUBMITTAL REGISTER DATABASE

Prepare and maintain submittal register as the work progresses. Submit with the project design specifications required in Section 01160, "Design Documents." Use electronic submittal register program furnished by the Government. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output into columns.

## 1.4.1 Submittal Register

Submit submittal register as an electronic database, using submittals management program furnished to Contractor. Submit with quality control plan and project schedule required by Section 01450, "Quality Control" and Section 01321, "Network Analysis Schedules." Do not change data in columns (c), (d), (e), and (f) as delivered by the Government. Verify that all submittals required for project are listed and add missing submittals. Complete the following on the register database:

Column (a) Activity Number: Activity number from the project schedule.

- Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.
- Column (h) Contractor Approval Date: Date Contractor needs approval of submittal.
- Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

## 1.4.2 Contractor Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in program utilized by Contractor.

- Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.
- Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.
- Column (1) List date of submittal transmission.
- Column (q) List date approval received.

## 1.4.3 Approving Authority Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in program utilized by Contractor.

Column (b).

Column (1) List date of submittal receipt.

Column (m) through (p).

Column (q) List date returned to Contractor.

# 1.4.4 Contractor Action Code and Action Code

Entries used will be as follows (others may be prescribed by Transmittal Form):

NR - Not Received

AN - Approved as noted

A - Approved

RR - Disapproved, Revise, and Resubmit

#### 1.4.5 Copies Delivered to the Government

Deliver one copy of submitted register updated by Contractor to Government with each invoice request. Deliver in electronic format, unless a paper

copy is requested by Contracting Officer.

#### 1.5 PROCEDURES FOR SUBMITTALS

## 1.5.1 Reviewing, Certifying, Approving Authority

QC organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. Approving authority on submittals is QC manager unless otherwise specified for specific submittal. At each "Submittal" paragraph in individual specification sections, a notation "G," following a submittal item, indicates Contracting Officer is approving authority for that submittal item.

#### 1.5.2 Constraints

- a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
- b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.
- c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.
- d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

## 1.5.3 Scheduling

- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
- b. Except as specified otherwise, allow review period, beginning with receipt by approving authority, that includes at least 15 working days for submittals for QC manager approval and 20 working days for submittals for Contracting Officer approval. Period of review for submittals with Contracting Officer approval begins when Government receives submittal from QC organization. Period of review for each resubmittal is the same as for initial submittal.
- c. For submittals requiring review by fire protection engineer, allow review period, beginning when Government receives submittal from QC organization, of 30 working days for return of submittal to the Contractor. Period of review for each resubmittal is the same as for initial submittal.

#### 1.5.4 Variations

Variations from contract requirements require Government approval pursuant

to contract Clause entitled "FAR 52.236-21, Specifications and Drawings for Construction" and will be considered where advantageous to Government.

## 1.5.4.1 Considering Variations

Discussion with Contracting Officer prior to submission, will help ensure functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

## 1.5.4.2 Proposing Variations

When proposing variation, deliver written request to the Contracting Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost saving. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

## 1.5.4.3 Warranting That Variation Are Compatible

When delivering a variation for approval, Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

#### 1.5.4.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the Government of submittals with variations.

## 1.5.5 Contractor's Responsibilities

- a. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.
- b. Transmit submittals to QC organization in accordance with schedule on approved Submittal Register, and to prevent delays in the work, delays to Government, or delays to separate Contractors.
- c. Advise Contracting Officer of variation, as required by paragraph entitled "Variations."
- d. Correct and resubmit submittal as directed by approving authority. When resubmitting disapproved transmittals or transmittals noted for resubmittal, the Contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing or on resubmitted submittal, to revisions not requested by approving authority on previous submissions.

- e. Furnish additional copies of submittal when requested by Contracting Officer, to a limit of 20 copies per submittal.
- f. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- g. Ensure no work has begun until submittals for that work have been returned as "approved," or "approved as noted" or "approved except as noted; resubmission not required", except to the extent that a portion of work must be accomplished as basis of submittal.

#### 1.5.6 QC Organization Responsibilities

- a. Note date on which submittal was received from Contractor on each submittal.
- b. Review each submittal; and check and coordinate each submittal with requirements of work and contract documents.
- c. Review submittals for conformance with project design concepts and compliance with contract documents.
- d. Act on submittals, determining appropriate action based on QC organization's review of submittal.
  - (1) When QC manager is approving authority, take appropriate action on submittal from the possible actions defined in paragraph entitled, "Actions Possible."
  - (2) When Contracting Officer is approving authority or when variation has been proposed, forward submittal to Government with certifying statement or return submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of submittal determines appropriate action.
- e. Ensure that material is clearly legible.
- f. Stamp each sheet of each submittal with QC certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.
  - (1) When approving authority is Contracting Officer, QC organization will certify submittals forwarded to Contracting Officer with the following certifying statement:
- "I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number N62470-01-R-1055, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval.

Certified	by S	Submittal	Reviewer	 Date	
(Signature	e whe	n applica	able)		

Certified	by	QC	manager	 Date	
(Signature	⊇)				

- (2) When approving authority is QC manager, QC manager will use the following approval statement when returning submittals to Contractor as "Approved" or "Approved as Noted."
- "I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with contract Number N62470-01-R-1055, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is \_\_\_\_\_ approved for use.

Certified by	Submittal	Reviewer	 Date	
(Signature w	hen applica	able)		

Approved by QC manager \_\_\_\_\_\_, Date \_\_\_\_" (Signature)

- g. Sign certifying statement or approval statement. The person signing certifying statements shall be QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.
- h. Update submittal register database as submittal actions occur and maintain the submittal register at project site until final acceptance of all work by Contracting Officer.
- i. Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

## 1.5.7 Government's Responsibilities

When approving authority is Contracting Officer, the Government will:

- a. Note date on which submittal was received from QC manager, on each submittal for which the Contracting Officer is approving authority.
- b. Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
- c. Identify returned submittals with one of the actions defined in paragraph entitled "Actions Possible" and with markings appropriate for action indicated.

#### 1.5.8 Actions Possible

Submittals will be returned with one of the following notations:

a. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required , does not have evidence of being reviewed and approved by Contractor, or is not

complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

- b. Submittals marked "approved" "approved as submitted" authorize Contractor to proceed with work covered.
- c. Submittals marked "approved as noted" or "approved except as noted; resubmission not required" authorize Contractor to proceed with work as noted provided Contractor takes no exception to the notations.
- d. Submittals marked "revise and resubmit" or "disapproved" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and shall be resubmitted with appropriate changes. No work shall proceed for this item until resubmittal is approved.

#### 1.6 FORMAT OF SUBMITTALS

#### 1.6.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals with transmittal form prescribed by Contracting Officer and standard for project. The transmittal form shall identify Contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations.

# 1.6.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

- a. Project title and location.
- b. Construction contract number.
- c. Section number of the specification section by which submittal is required.
- d. Submittal description (SD) number of each component of submittal.
- e. When a resubmission, alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.
- f. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other second tier contractor associated with submittal.

g. Product identification and location in project.

#### 1.6.3 Format for Product Data

- a. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page and catalog item numbers for product data.
- b. Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains.
- c. Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.

#### 1.6.4 Format for Shop Drawings

- a. Shop drawings shall not be less than  $8\ 1/2$  by 11 inches nor more than 30 by 42 inches.
- b. Present  $8\ 1/2$  by 11 inches sized shop drawings as part of the bound volume for submittals required by section. Present larger drawings in sets.
- c. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
- d. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.

## 1.6.5 Format of Samples

- a. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
  - (1) Sample of Equipment or Device: Full size.
  - (2) Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.
  - (3) Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.
  - (4) Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.

- (5) Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.
- (6) Color Selection Samples: 2 by 4 inches.
- (7) Sample Panel: 4 by 4 feet.
- (8) Sample Installation: 100 square feet.
- b. Samples Showing Range of Variation: Where variations are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range.
- c. Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples shall be in undamaged condition at time of use.
- d. Recording of Sample Installation: Note and preserve the notation of area constituting sample installation but remove notation at final clean up of project.
- e. When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

# 1.6.6 Format of Administrative Submittals

- a. When submittal includes a document which is to be used in project or become part of project record, other than as a submittal, do not apply Contractor's approval stamp to document, but to a separate sheet accompanying document.
- b. Operation and Maintenance Manual Data: Submit in accordance with Section 01781, "Operation and Maintenance Data." Include components required in that section and the various technical sections.

# 1.7 QUANTITY OF SUBMITTALS

- 1.7.1 Number of Copies of Product Data
  - a. Submit five copies of submittals of product data requiring review and approval only by QC organization and eight copies of product data requiring review and approval by Contracting Officer.
- 1.7.2 Number of Copies of Shop Drawings

Submit shop drawings in compliance with quantity requirements specified for product data.

- 1.7.3 Number of Samples
  - a. Submit two samples, or two sets of samples showing range of

variation, of each required item. One approved sample or set of samples will be retained by approving authority and one will be returned to Contractor.

- b. Submit one sample panel. Include components listed in technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of non-solid materials.
- 1.7.4 Number of Copies of Administrative Submittals
  - a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for product data.
  - b. Submit administrative submittals required under "SD-10 Operation and Maintenance Data" to conform to Section 01781, "Operation and Maintenance Data."
- 1.8 FORWARDING SUBMITTALS
- 1.8.1 Samples Required of the Contractor

Submit samples to Commander, LANTNAVFACENGCOM, 1510 Gilbert Street, Norfolk, Virginia 23511-2699.

1.8.2 Shop Drawings, Product Data, and O&M Data

As soon as practicable after award of the contract, and before procurement or fabrication, submit, except as specified otherwise, to the Commander, LANTNAVFACENGCOM, Code 04A1, 1510 Gilbert Street, Norfolk, Virginia 23511-2699, the shop drawings, product data and O&M Data required in the technical sections of this specification. LANTNAVFACENGCOM will review and provide surveillance for the Contracting Officer to determine if Contractor-approved submittals comply with the contract requirements, and will review and approve for the Contracting Officer those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements. One copy of the transmittal form for submittals shall be forwarded to the Resident Officer in Charge of Construction.

#### PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

## SECTION 01450

# QUALITY CONTROL 09/00

## PART 1 GENERAL

# 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

# AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 880	(1995) Criteria for Use in Evaluation of Testing Laboratories and Organization for Examination and Inspection of Steel, Stainless Steel, and Related Alloys
ASTM C 1077	(1997) Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM D 3666	(1996) Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials
ASTM D 3740	(1996) Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(1995; Rev. C) Agencies Engaged in the Testing and/or Inspection of Materials Used on Construction
ASTM E 543	(1996) Agencies Performing Nondestructive Testing

# CORPS OF ENGINEERS (COE)

COE EM-385-1-1	(1996)	Safety	and	Health	Requirements
	Manual				

#### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

## SD-01 Preconstruction Submittals

Quality Control (QC) plan; G

Submit a QC plan within 20 calendar days after receipt of Notice of Award.

The QC Plan shall include a preliminary submittal of the list of definable features of work that shall cover the first 90 days of construction.

Submit the completed list of definable features of work in conjunction with the Accepted Network Analysis Schedule.

Any approval by the Government of the QC Plan shall be considered to be "approved as noted, resubmittal required" and will be in effect only until the completed list of definable features of work is received and approved. If the completed list of definable features of work and accepted network schedule is not received within the time indicated in the paragraph entitled "Accepted Network Analysis Schedule" of Section 01321, "Network Analysis Schedules," the QC Plan will become disapproved and all work, except for the work authorized in the paragraph entitled "Preliminary Work Authorized Prior to Approval," will stop.

#### 1.3 INFORMATION FOR THE CONTRACTING OFFICER

Prior to commencing work on construction, the Contractor can obtain a single copy set of the current report forms from the Contracting Officer, or by calling the local EFD/EFA QA Coordinator for an electronic version of the report forms. The report forms will consist of the Contractor Production Report, Contractor Production Report (Continuation Sheet), Contractor Quality Control Report, Contractor Quality Control Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Rework Items List, and Testing Plan and Log. Other reports referenced below may be in formats customarily used by the Contractor, Testing Laboratories, etc. and will contain the information required by this specification.

Deliver the following to the Contracting Officer:

- a. Contractor Quality Control Report; original and 1 copy , by 10:00 AM the next working day after each day that work is performed.
- b. Contractor Production Report: Original and 1 copy , by 10:00 AM the next working day after each day that work is performed, attached to the Contractor Quality Control Report.
- c. Preparatory Phase Checklist: Original attached to the original Contractor Quality Control Report and 1 copy attached to each copy.
- d. Initial Phase Checklist: Original attached to the original Contractor Quality Control Report and 1 copy attached to each copy.
- e. Field Test Reports: 2 copies, within 2 working days after the test is performed, attached to the Contractor Quality Control

Report.

- f. Monthly Summary Report of Tests: 2 copies attached to the Contractor Quality Control Report.
- g. Testing Plan and Log, 2 copies, at the end of each month.
- h. Rework Items List: 2 copies, by the last working day of the month.
- h. QC Meeting Minutes: 2 copies, within 2 working days after the meeting.
- j. QC Certifications: As required by the paragraph entitled "QC Certifications."
- k. Submittal Review and Approval Plan and Log indicating the method proposed to track the Contractor's internal submittals. As a minimum, the Submittal Review and Approval Plan and Log shall include a complete list of required submittals and corresponding specification sections, submittal and review dates, record of review actions and tracking history.

## 1.4 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, a QC Plan, a QC Plan Meeting, a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, and QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract. The QC program shall cover on-site and off-site work and shall be keyed to the work sequence. No work or testing may be performed unless the QC Manager is on the work site. The QC Manager shall report to an officer of the firm and shall not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the Quality Control Manager is the primary individual responsible for quality control, all three individuals will be held responsible for the quality of work on the job. The project superintendent will be held responsible for the quality of production.

#### 1.4.1 Preliminary Work Authorized Prior to Approval

The only work that is authorized to proceed prior to the approval of the QC Plan is mobilization of storage and office trailers, temporary utilities, and surveying.

# 1.4.2 Approval

Approval of the QC Plan is required prior to the start of construction. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time in order to

verify the submitted qualifications. All QC organization personnel shall be subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the contract.

## 1.4.3 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed change, including changes in the QC organization personnel, a minimum of seven calendar days prior to a proposed change. Proposed changes shall be subject to acceptance by the Contracting Officer.

#### 1.5 QC ORGANIZATION

## 1.5.1 QC Manager

#### 1.5.1.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this contract. The QC Manager shall not be designated as the safety competent person as defined by COE EM-385-1-1. The QC Manager is required to attend the QC Plan Meeting, attend the Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control except for those phases of control designated to be performed by QC specialists, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by Testing Laboratory personnel and any other inspection and testing personnel required by this Contract.

#### 1.5.1.2 Qualifications

An individual with a minimum of 10 years experience as a superintendent, inspector, QC Manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of COE EM-385-1-1, and have experience in the areas of hazard identification and safety compliance.

#### 1.5.1.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager shall have completed the course entitled "Construction Quality Management for Contractors." The QC Manager shall have obtained the CQM course certification within 90 days of award. This course is periodically offered by Corps of Engineers/AGC at (804) 346-3383.

# 1.5.2 Alternate QC Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The period of absence may not exceed two weeks at one time, and not more than 30 workdays during a

calendar year. The qualification requirements for the Alternate QC Manager shall be the same as for the QC manager.

1.5.3 Representative of the Contractor's "Designer of Record"

The Contractor's "Designer of Record," defined in Part 1 of Section 01330, "Submittal Procedures," shall furnish a representative to the QC Organization. The representative shall be a Registered Architect or Engineer, and shall visit the work site at least once a month during the duration of this contract. He or she shall develop, prepare, and submit a site visit inspection report within five calendar days after visit and submit the report to the Contracting Officer for review and approval.

1.5.4 Submittal Reviewer(s) Duties and Qualifications

Each of the following submittals shall be reviewed by an individual meeting the qualifications/experience specified below:

Qualification/Experience	Submittals to be	reviewed:
in Submittal Discipline	Spec Section No.	Submittal

Certified Industrial Hygienist 02081 Asbestos Hazard Abatement
Plan, Lead Abatement Plan,
PCB & Mercury Abatement Plan

## 1.5.5 QC Assistant

Provide an Administrative Assistant at the work site until the work has been accepted. The primary duty shall be to assist the QC Manager in processing and maintaining files for submittals, preparing and publishing reports and meeting minutes. After primary duties are accomplished, other duties may be assigned provided the duties do not interfere with primary duties.

#### 1.6 QUALITY CONTROL (QC) PLAN

## 1.6.1 Requirements

Provide, for approval by the Contracting Officer, a QC plan submitted in a 3-ring binder with pages numbered sequentially that covers both on-site and off-site work and includes the following:

- a. A table of contents listing the major sections identified with tabs in the following order:
  - I. QC ORGANIZATION
  - II. NAMES AND QUALIFICATIONS
  - III. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL
  - IV. OUTSIDE ORGANIZATIONS
  - V. APPOINTMENT LETTERS
  - VI. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER
  - VII. TESTING LABORATORY INFORMATION
  - VIII. TESTING PLAN AND LOG
  - IX. PROCEDURES TO COMPLETE REWORK ITEMS

- X. DOCUMENTATION PROCEDURES
- XI. LIST OF DEFINABLE FEATURES
- XII. PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL
- XIII. PERSONNEL MATRIX
- XIV. PROCEDURES FOR COMPLETION INSPECTION
- b. A chart showing the QC organizational structure.
- c. Names and qualifications, in resume format, for each person in the QC organization. Include the CQM course certifications for the QC Manager and Alternate QC Manager as required by the paragraphs entitled "Construction Quality Management Training" and "Alternate QC Manager Duties and Qualifications".
- d. Duties, responsibilities and authorities of each person in the QC organization.
- e. A listing of outside organizations such as, architectural and consulting engineering firms that will be employed by the Contractor and a description of the services these firms will provide.
- f. Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager and stating that they are responsible for implementing and managing the QC program as described in this contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of quality control, and their authority to stop work which is not in compliance with the contract.
- g. Procedures for reviewing, approving and managing submittals.

  Provide the names of the persons in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in section entitled "Submittal Procedures."
- h. Testing laboratory information required by the paragraphs entitled "Accreditation Requirements" or "Construction Materials Testing Laboratory Requirements", as applicable.
- i. A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
- j. Procedures to identify, record, track and complete rework items.
- k. Documentation procedures, including proposed report formats.
- 1. List of definable features of work. A definable feature of work (DFOW) is a task which is separate and distinct from other tasks, has the same control requirements and work crews. The list shall be cross-referenced to the Contractor's Construction Schedule and the specification sections. For projects requiring a Progress Chart, the list of definable features of work shall include but

not be limited to all items of work on the schedule. For projects requiring a Network Analysis Schedule, the list of definable features of work shall include but not be limited to all critical path activities.

m. Procedures for Performing the Three Phases of Control. For each DFOW, provide the DFOW's Preparatory and Initial Phase Checklists. Each list shall include a breakdown of quality checks that will be used when performing the quality control functions, inspections, and tests required by the contract documents. The Preparatory and Initial Phases and meetings shall be conducted with a view towards obtaining quality construction by planning ahead and identifying potential problems for each definable feature of work.

#### 1.7 QC PLAN MEETING

Prior to submission of the QC plan, meet with the Contracting Officer to discuss the QC plan requirements of this Contract. The purpose of this meeting is to develop a mutual understanding of the QC plan requirements prior to plan development and submission.

#### 1.8 COORDINATION AND MUTUAL UNDERSTANDING MEETING

After submission of the QC Plan, and prior to the start of construction, meet with the Contracting Officer to present the QC program required by this Contract. The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, and the coordination of the Contractor's management, production and QC personnel. At the meeting, the Contractor will be required to explain in detail how three phases of control will be implemented for each definable feature of work. As a minimum, the Contractor's personnel required to attend shall include an officer of the firm, the project manager, project superintendent, QC Manager, Alternate QC Manager Assistant QC Manager, A/E, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities shall have a principal of the firm at the meeting. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor, and the Contracting Officer. A copy of the signed minutes shall be provided to all attendees by the Contractor. Repeat the coordination and mutual understanding meeting when a new QC Manager is appointed.

Provide a room acceptable to the Contracting Officer for the one day meeting. The room shall be equipped with VCR and monitor equipment, overhead projector and a flip chart. Submit for Contracting Officer approval the location, date and agenda for this meeting.

#### 1.9 QC MEETINGS

After the start of construction, the QC Manager shall conduct weekly QC meetings at the work site with the project superintendent and QC specialists when applicable. The QC Manager shall prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer may attend these meetings.

The QC Manager shall notify the Contracting Officer at least 48 hours in advance of each meeting. As a minimum, the following shall be accomplished at each meeting:

- a. Review the minutes of the previous meeting;
- b. Review the schedule and the status of work:
  - (1) Work or testing accomplished since last meeting
  - (2) Rework items identified since last meeting
  - (3) Rework items completed since last meeting;
- c. Review the status of submittals:
  - (1) Submittals reviewed and approved since last meeting
  - (2) Submittals required in the near future;
- d. Review the work to be accomplished in the next 2 weeks and documentation required:
  - (1) Establish completion dates for rework items
  - (2) Update the schedule showing planned and actual dates of the preparatory, initial and follow-up phases, including testing and any other inspection required by this contract
  - (3) Discuss construction methods and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work
  - (4) Discuss status of off-site work or testing
  - (5) Documentation required;
  - (6) Discuss upcoming Activity Hazard Analyses:
- e. Resolve QC and production problems:
  - (1) Assist in resolving Request for Information issues; and
- f. Address items that may require revising the QC plan:
  - (1) Changes in QC organization personnel
  - (2) Changes in procedures.
- g. Review health and safety plan
- 1.10 THREE PHASES OF CONTROL

The Three Phases of Control shall adequately cover both on-site and

off-site work and shall include the following for each definable feature of work.

## 1.10.1 Preparatory Phase

Notify the Contracting Officer at least 2 work days in advance of each preparatory phase. This phase shall include a meeting conducted by the QC Manager and attended by the superintendent, and the foreman responsible for the definable feature. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. Perform the following prior to beginning work on each definable feature of work:

- a. Review each paragraph of the applicable specification sections;
- b. Review the Contract drawings;
- c. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required;
- d. Review the testing plan and ensure that provisions have been made to provide the required QC testing;
- e. Examine the work area to ensure that the required preliminary work has been completed;
- f. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data;
- g. Discuss construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each definable feature of work; and
- h. Review the safety plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.

#### 1.10.2 Initial Phase

Notify the Contracting Officer at least 2 work days in advance of each initial phase. When construction crews are ready to start work on a definable feature of work, conduct the initial phase with the superintendent, and the foreman responsible for that definable feature of work. Observe the initial segment of the definable feature of work to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily Contractor Quality Control Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each definable feature of work:

a. Establish the quality of workmanship required;

- b. Resolve conflicts;
- c. Ensure that testing is performed by the approved laboratory, and
- d. Check work procedures for compliance with the Safety Plan and the appropriate activity hazard analysis to ensure that applicable safety requirements are met.

## 1.10.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary until the completion of each definable feature of work and document in the daily Contractor Quality Control Report:

- a. Ensure the work is in compliance with Contract requirements;
- b. Maintain the quality of workmanship required;
- c. Ensure that testing is performed by the approved laboratory;
- d. Ensure that rework items are being corrected; and
- e. Perform safety inspections.

## 1.10.4 Additional Preparatory and Initial Phases

Additional Preparatory and Initial Phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a definable feature is resumed after substantial period of inactivity, or if other problems develop.

1.10.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

#### 1.11 SUBMITTAL REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in section entitled "Submittal Procedures."

# 1.12 TESTING

Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

## 1.12.1 Accreditation Requirements

Construction materials testing laboratories performing work for Navy construction contracts will be required to submit the following:

a. A copy of the Certificate of Accreditation and Scope of Accreditation by an acceptable laboratory accreditation authority.

Construction materials testing laboratories performing work for Navy construction contracts must be accredited by one of the laboratory accreditation authorities. The laboratory's scope of accreditation must include the ASTM standards listed in the paragraph titled "Construction Materials Testing Laboratory Requirements" as appropriate to the testing field. The policy applies to the specific laboratory performing the actual testing, not just the "Corporate Office".

## 1.12.2 Construction Materials Testing Laboratory Requirements

Provide an independent construction materials testing laboratory or establish a laboratory accredited by an acceptable laboratory accreditation authority to perform sampling and tests required by this Contract. Testing laboratories that have obtained accreditation by an acceptable laboratory accreditation authority listed in the paragraph entitled "Laboratory Accreditation Authorities" submit to the Contracting Officer, a copy of the Certificate of Accreditation and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the Contract. For testing laboratories that have not yet obtained accreditation by an acceptable laboratory accreditation authority listed in the paragraph entitled "Laboratory Accreditation Authorities" submit an acknowledgment letter from one of the laboratory accreditation authorities indicating that the application for accreditation has been received and the accreditation process has started, and submit to the Contracting Officer for approval, certified statements, signed by an official of the testing laboratory attesting that the proposed laboratory, meets or conforms to the ASTM standards listed below as appropriate to the testing field.

- a. Laboratories engaged in testing of construction materials shall meet the requirements of ASTM E 329.
- b. Laboratories engaged in testing of concrete and concrete aggregates shall meet the requirements of ASTM C 1077.
- c. Laboratories engaged in testing of bituminous paving materials shall meet the requirements of ASTM D 3666.
- d. Laboratories engaged in testing of soil and rock, as used in engineering design and construction, shall meet the requirements of ASTM D 3740.
- e. Laboratories engaged in inspection and testing of steel, stainless steel, and related alloys will be evaluated according to ASTM A 880.
- f. Laboratories engaged in nondestructive testing (NDT) shall meet the requirements of ASTM E 543.
- g. Laboratories engaged in Hazardous Materials Testing shall meet the requirements of OSHA and EPA.

# 1.12.3 Laboratory Accreditation Authorities

Laboratory Accreditation Authorities are the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology, the American Association of State Highway and Transportation Officials (AASHTO) program, ICBO Evaluation Service, Inc. (ICBO ES), and the American Association for Laboratory Accreditation (A2LA) program and the Washington Association of Building Officials (WABO) (Approval authority for WABO is limited to projects within Washington State), and the Washington Area Council of Engineering Laboratories (WACEL) (Approval authority by WACEL is limited to projects within the Chesapeake Division and Public Works Center Washington geographical area).

Furnish to the Contracting Officer, a copy of the Certificate of Accreditation and Scope of Accreditation. The scope of the laboratory's accreditation shall include the test methods required by the Contract.

## 1.12.4 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.

#### 1.12.5 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager. Furnish a summary report of field tests at the end of each month. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month.

# 1.12.6 Test Reports and Monthly Summary Report of Tests

The QC Manager shall furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Contracting Officer. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month.

# 1.13 QC CERTIFICATIONS

# 1.13.1 Contractor Quality Control Report Certification

Each Contractor Quality Control Report shall contain the following statement: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this

report."

#### 1.13.2 Invoice Certification

Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that as-built drawings are current and attesting that the work for which payment is requested, including stored material, is in compliance with contract requirements.

## 1.13.3 Completion Certification

Upon completion of work under this Contract, the QC Manager shall furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract."

#### 1.14 COMPLETION INSPECTIONS

#### 1.14.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Punch-Out Inspection. The punch list shall include the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Contracting Officer. The QC Manager or staff shall make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished the Contractor shall notify the Government that the facility is ready for the Government "Pre-Final Inspection."

## 1.14.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" may be developed as a result of this inspection. The QC Manager shall ensure that all items on this list are corrected prior to notifying the Government that a "Final" inspection with the customer can be scheduled. Any items noted on the "Pre-Final" inspection shall be corrected in timely manner and shall be accomplished before the contract completion date for the work or any particular increment thereof if the project is divided into increments by separate completion dates.

# 1.14.3 Final Acceptance Inspection

The QC Manager, the superintendent or other primary contractor management personnel, and the Contracting Officer's representative will be in attendance at this inspection. Additional Government personnel may be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the "Pre-Final" inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final inspection stating that all specific items previously identified

to the Contractor as being unacceptable, along with all the remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction." When the Contracting Officer takes possession of partially completed work, it will be in accordance with Contract Clause "Use and Possession Prior to Completion".

#### 1.15 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

## 1.15.1 Contractor Production Report

Reports are required for each day that work is performed and shall be attached to the Contractor Quality Control Report prepared for the same day. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Production Reports are to be prepared, signed and dated by the project superintendent and shall contain the following information:

- a. Date of report, report number, name of contractor, Contract number, title and location of Contract and superintendent present.
- b. Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.
- c. Identify work performed by corresponding Schedule Activity No., PC#, Modification No., etc.
- d. A list of Contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed, hours worked by trade, daily total work hours on work site this date (include hours on continuation sheets), and total work hours from start of construction.
- e. A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met including the results on the following:
  - (1) Was a job safety meeting held this date? (If YES, attach a copy of the meeting minutes.)
  - (2) Were there any lost time accidents this date? (If YES, attach a copy of the completed OSHA report.)
  - (3) Was crane/manlift/trenching/scaffold/hv electrical/high work/hazmat work done? (If YES, attach a statement or checklist showing inspection performed.)

- (4) Was hazardous material/waste released into the environment? (If YES, attach a description of incident and proposed action.)
- f. Identify Schedule Activity No. related to safety action and list safety actions taken today and safety inspections conducted.
- g. Identify Schedule Activity No., Submittal # and list equipment/material received each day that is incorporated into the job.
- h. Identify Schedule Activity No., Owner and list construction and plant equipment on the work site including the number of hours used.
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site. For each remark given, identify the Schedule Activity No. that is associated with the remark.

## 1.15.1.1 Contractor Production Report (Continuation Sheet)

Additional space required to contain daily information on the Contractor Production Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Production Report.

## 1.15.2 Contractor Quality Control Report

Reports are required for each day that work is performed and for every seven consecutive calendar days of no-work and on the last day of a no-work period. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Quality Control Reports are to be prepared, signed and dated by the QC Manager and shall contain the following information:

- a. Date of report, report number, Contract Number, and Contract Title.
- Indicate if Preparatory Phase work was performed today (Yes/No checkboxes).
- c. If Preparatory Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Preparatory Phase Checklist. An example of the Index # is: 0025-P01, where "0025" is the Contractor Quality Control Report Number, "P" indicates Preparatory Phase, and "01" is the Preparatory Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Preparatory Phase Checklist.

- d. Indicate if Initial Phase work was performed today (Yes/No checkboxes).
- e. If Initial Phase work was performed today (including on-site and off-site work), identify its Schedule Activity No. and Definable Feature of Work. The Index # is a cross reference to the Initial Phase Checklist. An example of the Index # is: 0025-I01, where "0025" is the Contractor Quality Control Report Number, "I" indicates Initial Phase, and "01" is the Initial Phase Checklist number(s) for this date. Each entry in this section must be accompanied with a corresponding Initial Phase Checklist.
- f. Results of the Follow-up Phase inspections held today (including on-site and off-site work), including Schedule Activity No., the location of the definable feature of work, Specification Sections, etc. Indicate in the report for this definable feature of work that the work complies with the Contract as approved in the Initial Phase, work complies with safety requirements, and that required testing has been performed and include a list of who performed the tests.
- g. List the rework items identified, but not corrected by close of business; along with its associated Schedule Activity Number.
- h. List the rework items corrected from the rework items list along with the corrective action taken and its associated Schedule Activity Number.
- i. Include a "remarks" section in this report which will contain pertinent information including directions received, quality control problem areas, deviations from the QC plan, construction deficiencies encountered, QC meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the QC Organization and corrective action taken by the Contractor. For each remark given, identify the Schedule Activity No. that is associated with the remark.
- j. Contractor Quality Control Report certification, signature and date.

#### 1.15.2.1 Contractor Quality Control Report (Continuation Sheet)

Additional space required to contain daily information on the Contractor Quality Control Report will be placed on its Continuation Sheet(s). An unlimited number of Continuation Sheets may be added as necessary and attached to the Contractor Quality Control Report.

## 1.15.3 Preparatory Phase Checklist

Each Definable Feature of Work that is in the Preparatory Phase shall have this checklist filled out for it. The checklist shall be identified by terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be filled out. Duplicate this information in the header of the second page of the report.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Preparatory Phase section of the Contractor Quality Control Report. Duplicate this information in the header of the second page of the report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Government Representative and indicate (Yes/No checkboxes) whether or not the Government Rep was notified. Indicate the Names of Preparatory Phase Meeting attendees, their position and company/government they are with.
- d. Submittals: Indicate if submittals have been approved (Yes/No checkboxes), if no indicate what has not been submitted. Are materials on hand (Yes/No checkboxes) and if not, what items are missing. Check delivered material/equipment against approved submittals and comment as required.
- e. Material Storage: Indicate if materials/equipment is stored properly (Yes/No checkboxes) and if not, what action is/was taken.
- f. Specifications: Review and comment on Specification Paragraphs that describe the material/equipment, procedure for accomplishing the work and clarify any differences.
- g. Preliminary Work & Permits: Ensure preliminary work is in accordance with the contract documents and necessary permits are on file, if not, describe the action taken.
- h. Testing: Identify who performs tests, the frequency, and where tests are to occur. Review the testing plan, report abnormalities, and if the test facilities have been approved.
- i. Safety: Indicate if the activity hazard analysis has been approved (Yes/No checkboxes) and comment on the review of the applicable portions of the COE EM-385-1-1.
- j. Meeting Comments: Note comments and remarks during the Preparatory Phase Meeting that was not addressed in previous sections of this checklist.
- k. Other Items or Remarks: Note any other remarks or items that were a result of the Preparatory Phase.
- 1. QC Manager will sign and date the checklist.

#### 1.15.4 Initial Phase Checklist

Each Definable Feature of Work that is in the Initial Phase shall have this checklist filled out for it. The checklist shall be identified by

terminology consistent with the construction schedule. Attach this checklist to the Contractor Quality Control Report of the same date.

- a. Specification Section, date of report, and Contract number shall be entered.
- b. Definable Feature of Work, Schedule Activity No. and Index # entry and format will match entry in the Initial Phase section of the Contractor Quality Control Report.
- c. Personnel Present: Indicate the number of hours of advance notice that was given to the Government Representative and indicate (Yes/No checkboxes) whether or not the Government Rep was notified. Indicate the Names of Initial Phase Meeting attendees, their position and company/government they are with.
- d. Procedure Compliance: Comment on compliance with procedures identified at Preparatory Phase of Control and assurance that work is in accordance with plans, specifications and submittals.
- e. Preliminary Work: Ensure preliminary work being placed is in compliance and if not, what action is/was taken.
- f. Workmanship: Identify where initial work is located; if a sample panel is required (Yes/No checkboxes); is the initial work the sample (Yes/No checkboxes); and if Yes, describe the panel location and precautions taken to preserve the sample.
- g. Resolution: Comment on any differences and the resolutions reached.
- h. Check Safety: Comment on the safety review of the job conditions.
- i. Other: Note any other remarks or items that were a result of the Initial Phase.
- j. QC Manager will sign and date the checklist.

# 1.15.5 Quality Control Validation

Establish and maintain the following in a series of 3 ring binders. Binders shall be divided and tabbed as shown below. These binders shall be readily available to the Government's Quality Assurance Team during all business hours.

- a. All completed Preparatory and Initial Phase Checklists, arranged by specification section.
- b. All milestone inspections , arranged by Activity/Event Number.
- c. A current up-to-date copy of the Testing and Plan Log with supporting field test reports, arranged by specification section.
- d. Copies of all contract modifications, arranged in numerical order.

Also include documentation that modified work was accomplished.

- e. A current up-to-date copy of the Rework Items List.
- f. Maintain up-to-date copies of all punch lists issued by the QC Staff on the Contractor and Sub-Contractors and all punch lists issued by the Government.

#### 1.15.6 Testing Plan and Log

As tests are performed, the QC Manager shall record on the "Testing Plan and Log" the date the test was conducted, the date the test results were forwarded to the Contracting Officer, remarks and acknowledgement that an accredited or Contracting Officer approved testing laboratory was used. Attach a copy of the updated "Testing Plan and Log" to the last daily Contractor Quality Control Report of each month.

#### 1.15.7 Rework Items List

The QC Manager shall maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily Contractor Quality Control Report of each month. The Contractor shall be responsible for including on this list items needing rework including those identified by the Contracting Officer.

#### 1.15.8 As-Built Drawings

The QC Manager is required to ensure the as-built drawings, required by Section 01770, "Closeout Procedures," are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation (e.g. PC No., Modification No., Request for Information No., etc.). The QC Manager shall initial each deviation and each revision. Upon completion of work, the QC Manager shall furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

## 1.15.9 Report Forms

The following forms, are acceptable for providing the information required by the paragraph entitled "Documentation." While use of these specific formats are not required, any other format used shall contain the same information:

- a. Contractor Quality Control Report w/ continuation sheet(s).
- b. Contractor Production Report w/ continuation sheet(s).
- c. Preparatory Phase Checklist.
- d. Initial Phase Checklist.

- e. Testing Plan and Log.
- f. Rework Items List.

## 1.16 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time for excess costs or damages by the Contractor.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01500

# TEMPORARY FACILITIES AND CONTROLS 09/99

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

#### AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C511 (1997) Reduced-Pressure Principle Backflow Prevention Assembly

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)

FCCCHR-CCC Manual of Cross-Connection Control

FCCCHR-USC List of Approved Backflow Prevention

Assemblies

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

FHWA MUTCD (1988) Manual on Uniform Traffic Control

Devices

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

NFPA 241 (1996) Safeguarding Construction,
Alteration, and Demolition Operations

#### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Traffic control plan; G

Construction site plan; G

SD-03 Product Data

Backflow preventers

SD-06 Test Reports

Backflow Preventer Tests; G

SD-07 Certificates

Backflow Tester Certification; G

Backflow Preventers Certificate of Full Approval

#### 1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit a site plan showing the locations of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes used for this contract. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

#### 1.4 BACKFLOW PREVENTERS CERTIFICATE

Certificate of Full Approval from FCCCHR-USC, University of Southern California, attesting that the design, size and make of each backflow preventer has satisfactorily passed the complete sequence of performance testing and evaluation for the respective level of approval. Certificate of Provisional Approval will not be acceptable.

## 1.4.1 Backflow Prevention Training Certificate

The Contractor shall submit a certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations. The certificate must be current.

#### 1.5 TEMPORARY UTILITIES

## 1.5.1 Utilities at Special Locations

Reasonable amounts of utilities will be made available to the Contractor at the prevailing Government rates. These rates may be obtained upon application to the Commanding Officer, Marine Corps Air Station, Cherry Point, North Carolina, by way of the Contracting Officer. The Contractor will be responsible for making connections, providing transformers and meters, and making disconnections; and for providing backflow preventer devices on connections to domestic water lines. Neither potable water nor sanitary facilities will be available at the main Contractor laydown area at Marine Corps Air Station (MCAS), Cherry Point, NC.

#### 1.6 BACKFLOW TESTER CERTIFICATION

Prior to testing, submit to the Contracting Officer certification issued by the State or local regulatory agency attesting that the backflow tester has successfully completed a certification course sponsored by the regulatory agency. Tester shall not be affiliated with any company participating in any other phase of this Contract.

#### 1.7 WEATHER PROTECTION

Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

## 1.7.1 Building and Site Storm Protection

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions shall include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

## 1.7.1.1 Hurricane Condition of Readiness

Unless directed otherwise, comply with:

- a. Condition FOUR (Sustained winds of 50 knots or greater expected within 72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than 4 feet high. Remove all debris, trash, or objects that could become missile hazards. Contact ROICC for Condition Requirements and Condition of Readiness (COR) updates and completion of required actions.
- b. Condition THREE (Sustained winds of 50 knots or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition ONE" which cannot be completed within 18 hours. Cease all routine activities which might interfere with securing operations. Commence securing and stow all gear and portable equipment. Make preparations for securing buildings. Review requirements pertaining to "Condition TWO" and continue action as necessary to attain "Condition THREE" readiness. Contact ROICC for weather and COR updates and completion of required actions.
- c. Condition TWO (Sustained winds of 50 knots or greater expected within 24 hours): Curtail or cease routine activities until securing operation is complete. Reinforce or remove form work and scaffolding. Secure machinery, tools, equipment, materials, or remove from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact ROICC for weather and Condition of Readiness (COR) updates and

completion of required actions.

d. Condition ONE. (Sustained winds of 50 knots or greater expected within 12 hours): Secure the jobsite, and leave Government premises.

## 1.8 STATION OPERATION AFFECT ON CONTRACTOR OPERATIONS

#### 1.8.1 Special Restrictions Regarding Access of Vehicles and Parking

## 1.8.1.1 Interruption of Vehicular Traffic

If during the performance of work, it becomes necessary to modify vehicular traffic patterns at any locations, notify the Contracting Officer at least 15 calendar days prior to the proposed modification date, and provide a Traffic Control Plan detailing the proposed controls to traffic movement for approval. The plan shall be in accordance with State and local regulations and the FHWA MUTCD, Part VI. Make all notifications and obtain any permits required for modification to traffic movements outside Station's jurisdiction. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic.

#### 1.9 STORAGE AREAS

Contractor shall be responsible for security of his property. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

## 1.9.1 Storage Size and Location

The open site available for storage and office areas shall be coordinated with the Contracting Officer. Laydown storage areas may be up to five (5) miles away from the construction site.

## 1.9.2 Storage in Existing Buildings

The Contractor shall be working around existing buildings; the storage of material at Contractor's discretion, will be allowed in the units turned over to the Contractor. Provide 8 foot high security fence with a lockable gate around the storage area. Remove at the completion of work.

#### 1.10 TEMPORARY SANITARY FACILITIES

Provide adequate sanitary conveniences of a type approved for the use of persons employed on the work, properly secluded from public observation, and maintained in such a manner as required and approved by the Contracting Officer. Maintain these conveniences at all times without nuisance. Upon completion of the work, remove the conveniences from the premises, leaving the premises clean and free from nuisance. Dispose of sewage through connection to a municipal, district, or station sanitary sewage system. Where such systems are not available, use chemical toilets or comparably effective units, and periodically empty wastes into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Include provisions for pest control and elimination of odors.

#### 1.11 TEMPORARY BUILDINGS

Temporary facilities(including trailers) shall be in like new condition. Locate these facilities where directed and within the indicated operations area. Storage of material/debris under such facilities is prohibited. Contractor shall be responsible for the security of the stored property.

## 1.11.1 Trailers or Storage Buildings

Trailers or storage buildings will be permitted, where space is available, subject to the approval of the Contracting Officer. The trailers or buildings shall be in good condition, free from visible damage rust and deterioration, and meet all applicable safety requirements. Trailers shall be roadworthy and comply with all appropriate state and local vehicle requirements. Failure to maintain storage trailers or buildings to these standards shall result in the removal of non-complying units at the Contractor's expense. A sign not smaller than 24 by 24 inches shall be conspicuously placed on the trailer depicting the company name, business phone number, and emergency phone number. Trailers shall be anchored to resist high winds and must meet applicable state of local standards for anchoring mobile trailers.

## 1.11.1.1 LANTNAVFACENGCOM Trailer Sign

A sign that conforms to the following requirements and sketch shall be mounted on the trailer or building that shows the company name, phone number, and emergency phone number.

## Sign requirements:

Graphic panel: Aluminum, painted blue

Copy: Screen painted or vinyl die-cut, white

Typeface: Univers 65 u/lc

See Sketch No. 01500 (graphic).

## PART 2 PRODUCTS

#### 2.1 Backflow Preventers

Reduced pressure principle type conforming to the applicable requirements AWWA C511. Provide backflow preventers complete with hardware approved by MCAS Cherry Point Base Maintenance. The particular make, model/design, and size of backflow preventers to be installed shall be included in the latest edition of the List of Approved Backflow Prevention Assemblies issued by the FCCCHR-USC and shall be accompanied by a Certificate of Full Approval from FCCCHR-USC.

## PART 3 EXECUTION

## 3.1 TEMPORARY PHYSICAL CONTROLS

## 3.1.1 Access Controls

## 3.1.1.1 Temporary Barricades

Contractor shall provide for barricading around all work areas to prevent public access.

#### 3.1.1.2 Fencing

Fencing shall be provided along the construction site at all open excavations and tunnels to control access by unauthorized people. Fencing must be installed to be able to restrain a force of at least 250 pounds against it.

Enclose the project work are and Contractor lay-down area with an eight-foothigh chain link fence and gates with brown, UV light resistant, plastic fabric mesh netting (similar to tennis court or other screening). Remove the fence upon completion and acceptance of the work. Intent is to block (screen) public view of the construction.

In addition, prior to the start of work, enclose those ares at the construction site which are not within the construction fence with a temporary safety fence, including gates and warning signs, to protect the public from construction activities. The safety fence shall match the base standard color (or bright orange where it protects excavated areas), shall be made of plastic fence from recovered materials containing 60-100 percent recovered content level plastic, a minimum of 42 inches high, supported and tightly secured to steel posts located on minimum 10 foot centers. Remove the fence from the work site upon completion of the contract.

## 3.1.1.3 Signs

Place warning signs at the construction area perimeter designating the presence of construction hazards requiring unauthorized persons to keep out. Signs must be placed on all sides of the project, with at least one sign every 300 feet. All points of entry shall have signs designating the construction site as a hard hat area.

## 3.1.1.4 Traffic Work

All work around/involving roadways, to include roadway excavations and utility crossings, will be conducted in accordance with Manual of Traffic Control Devices. Contractors shall provide and ensure appropriate road closure and detour signs are established as necessary for motor traffic management. All road closures shall be coordinated with the Contracting Officer in advance. Self-illuminated (lighted) barricades shall be provided during hours of darkness. Brightly-colored (orange) vests are required for all personnel working in roadways. Road closures shall require a road closure plan showing the location of signage.

## 3.2 TEMPORARY WIRING

Provide temporary wiring in accordance with NFPA 241 and NFPA 70, Article

305-6(b), Assured Equipment Grounding Conductor Program. Program shall include frequent inspection of all equipment and apparatus.

#### 3.3 REDUCED PRESSURE BACKFLOW PREVENTERS

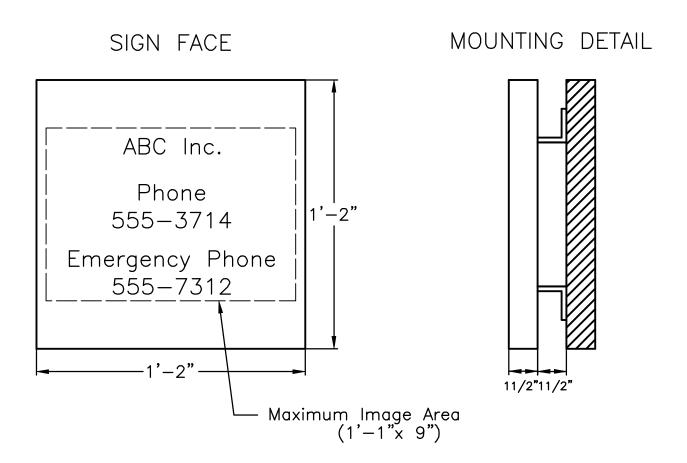
Provide an approved reduced pressure backflow prevention assembly at each location where the Contractor taps into the Government potable water supply.

A certified tester(s) shall perform testing of backflow preventer(s) for proper installation and operation and provide subsequent tagging. Backflow preventer tests shall be performed using test equipment, procedures, and certification forms conforming to those outlined in the latest edition of the Manual of Cross-Connection Control published by the FCCCHR-CCC. Test and tag each reduced pressure backflow preventer upon initial installation (prior to continued water use) and thereafter. Tag shall contain the following information: make, model, serial number, dates of tests, results, maintenance performed, and signature of tester. Record test results on certification forms conforming to requirements cited earlier in this paragraph.

#### 3.4 GRASS CUTTING

Cut grass (or annual weeds) within the construction and storage sites to a maximum 4 inch height at least once a week during the growing season unless the grass area is not visible to the public. Trim the grass around fences at time of grass cutting. Maintain grass or weeds on stockpiled earth as descried above.

-- End of Section --



## Sign requirements:

Graphic panel: Aluminum, painted blue

Copy: Screen painted or vinyl die—cut, white Typeface: Univera 65 u/lc

SKETCH NO. SK-01500

#### SECTION 01525

## SAFETY REQUIREMENTS 09/00

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14 (1991) Construction and Demolition
Operations - Requirements for Safety
Belts, Harnesses, Lanyards and Lifelines
for Construction and Demolition Use

ANSI Z359.1 (1992) Safety Requirements for Personal Fall Arrest Systems

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.5 (1994) Mobile Cranes

ASME B30.22 (1993) Articulating Boom Cranes

## CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.94 Ventilation

29 CFR 1910.120 Hazardous Waste Operations and Emergency

Response

29 CFR 1926.65 Hazardous Waste Operations and Emergency

Response

29 CFR 1926.502(f) Warning Line Systems

## CORPS OF ENGINEERS (COE)

COE EM-385-1-1 (1996) Safety and Health Requirements
Manual

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (1995) Portable Fire Extinguishers

NFPA 70 (1999) National Electrical Code

NFPA 241 (1996) Safeguarding Construction,

Alteration, and Demolition Operations

#### 1.2 DEFINITIONS

- a. Certified Industrial Hygienist. An industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.
- b. Certified Safety Professional. A safety manager, safety specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.
- c. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- d. Confined Space. A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.
- e. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.
- f. Health and Safety Plan (HASP). The HASP is the Navy equivalent Army term of SHP or SSHP used in COE EM-385-1-1. "USACE" property and equipment specified in COE EM-385-1-1 should be interpreted as Government property and equipment.
- g. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.
- h. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
- i. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Navy considers the prime contractor to be the

- "controlling authority" for all work site safety and health of the subcontractors.
- j. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).
- k. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.
- 1. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:
- (1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or
- (2) Lost Workday Cases, other than fatalities, that result in lost workdays, or
- (3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as facilities or lost workday cases.
- m. Safety Officer. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety officer, even through the QC has safety inspection responsibilities as part of the QC duties.
- n. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of \$200,000.
- o. Significant Accident. Any contractor accident which involves falls of (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of \$10,000 or more, but less than \$200,000; or when fire department or emergency medical treatment (EMT) assistance is required.
- p. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact

between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

## 1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-07 Certificates

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G

SD-11 Closeout Submittals

Daily Confined Space Entry Permit

Submit one copy of each permit attached to each Daily Production Report.

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Crane Reports

Crane Critical Lift Plan

Certificate of Compliance

## 1.4 QUALITY ASSURANCE

## 1.4.1 Safety Officer

Provide a Safety Officer at the work site to perform safety management, surveillance, inspections, and safety enforcement for the contractor. The Safety Officert shall be the safety "competent person" as defined by COE EM-385-1-1. The Safety Officert shall be at the work site at all times whenever work or testing is being performed, shall conduct daily safety inspections and shall have no other duties other than safety management, inspections, and safety enforcement on this contract.

#### 1.4.2 Qualifications

a. Qualifications of Safety Officer:

- (1) Ability to manage the on-site contractor safety program through appropriate management controls.
- (2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.
- (3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.
- (4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.
- b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety.
- c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.

## 1.4.3 Meetings

## 1.4.3.1 Preconstruction Conference

The safety officer shall attend the preconstruction conference.

## 1.4.3.2 Meeting on Work Procedures

- a. Meet with Contracting Officer to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and the CSP or CIH.
- b. Meet with Contracting Officer to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control, and the CSP or CIH.

## 1.4.3.3 Weekly Safety Meetings

Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

## 1.4.3.4 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

## 1.4.3.5 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

#### 1.4.4 Certifications

#### 1.4.4.1 Accident Prevention Plan (APP)

Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific. Notice To Proceed will be given after Government finds the APP acceptable.

## 1.4.4.2 Activity Hazard Analysis (AHA)

Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. In accordance with contract quality control requirements each AHA will be reviewed during an on-site preparatory inspection.

## 1.4.5 Reports

## 1.4.5.1 Crane Reports

Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

## 1.4.5.2 Crane Critical Lift Plan

Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads meet or exceed 75 percent of the crane load capacity in any configuration.

## 1.4.5.3 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering a Naval activity under this contract (see ROICC for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the Naval activity have been trained not to bypass safety device (e.g., anti-two block devices) during lifting operations. These certifications shall be posted on the crane.

## 1.5 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

#### 1.5.1 Contents of the Accident Prevention Plan

- a. Name and safety related qualifications of safety officer (including training and any certifications).
- b. Qualifications of competent and of qualified persons.
- c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.
- d. Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.
- e. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- f. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract Clause "FAR 52.223-3, Hazardous Material Identification and Material Safety Data." And the following:
  - (1) Inventory of Workplan hazardous materials to be introduced to the site with estimated quantities.
  - (2) Plan for protecting personnel and property during the removal, transport, storage and use of the materials.
  - (3) Emergency procedures for spill response and disposal.
  - (4) Material Safety Data Sheets for inventoried materials not required in other section of this specification.
  - (5) Labeling system to identify contents on all containers on-site.
  - (6) Plan for communicating high health hazards to employees and adjacent occupants.
- i. Alcohol and Drug Abuse Plan
  - (1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."

- (2) Description of the on-site prevention program
- j. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised once every six months for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.
- k. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.
- 1. Lead Abatement Work Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 13283, "Removal and Disposal of Lead Containing Paint".
- m. Asbestos Abatement Work Plan. The safety and health aspects prepared in accordance with Section 13281, "Engineering Control of Asbestos Containing Materials"
- n. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220, "Site Demolition" and referenced sources.
- o. Excavation Plan. The safety and health aspects prepared in accordance with Section 02302, "Excavation, Backfilling, and Compacting for Utilities".
- p. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.
- q. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.
- r. Emergency Lighting and Power Systems Plan (e.g. periodic testing of batteries for emergency lighting.)

#### 1.5.2 Hazardous Material Use

Each hazardous material must receive approval prior to bringing onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government

employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government employees from being exposed to any hazardous condition that could result from the work or storage. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

#### 1.6 ACTIVITY HAZARD ANALYSIS (AHA)

Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

## 1.7 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Contracting Officer upon request.

## 1.8 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

## 1.8.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

## 1.8.2 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

## 1.9 DUTIES OF THE SAFETY OFFICER

- a. Ensure construction hazards are identified and corrected.
- b. Maintain applicable safety reference material on the job site.
- c. Maintain a log of safety inspections performed.

- d. Attend the pre-construction conference as required.
- e. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

## 1.10 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

- a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.
- b. AHA
- c. Confined space entry permit.
- d. A sign indicating the number of hours worked since last lost workday accident.

## 1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

## 1.12 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment. However, if emergency medical care is rendered by Navy medical services, charges may be billed to Contractor at prevailing rates established in BUMED Instruction 6320.4 series. Reimbursement shall be made by Contractor to Naval Regional Medical Center Collection Agent upon receipt of monthly statement.

## 1.13 REPORTS

## 1.13.1 Accident Reports

- a. For recordable occupational injuries and illnesses, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the Navy Contractor Significant Incident Report (CSIR) form and provide to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide a copy of the CSIR form.
- b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a blank copy of the WHE accident report form.

#### 1.13.2 Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

## 1.13.3 Monthly Exposure Report

Monthly exposure reporting, to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

#### 1.13.4 OSHA Citations and Violations

Provide the Contracting Officer with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

#### 1.13.5 Crane Notification

Notify Contracting Officer at least 15 days prior to bringing any crane equipment on-site so that the Contracting Officer may arrange for any additional quality assurance spot checks necessary by the Government.

#### PART 2 PRODUCTS

## 2.1 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 5 feet.

#### PART 3 EXECUTION

## 3.1 CONSTRUCTION

Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

#### 3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain

asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Contracting Officer upon written request by Contractor.

#### 3.1.2 Unforeseen Hazardous Material

The Contractor's design should have identified materials such as PCB, lead paint, and friable and nonfriable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

#### 3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages a minimum of 15 days in advance. As a minimum, the request should include the location of the outage, utilities being effected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the ROICC and the Station Utilities Department to review the scope of work and the lock out/tag out procedures for worker protection. No work will be performed on energized electrical equipment unless proven impassable. Working equipment "hot" must be considered the last option.

## 3.3 PERSONNEL PROTECTION

#### 3.3.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.

#### 3.3.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI Al0.14.

#### 3.3.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest

Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

## 3.3.2.2 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

#### a. Low Sloped Roofs:

- (1) For work within 6 feet of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. Safety monitoring system is not adequate fall protection and is not authorized.
- (2) For work greater than 6 feet from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).
- b. Steep Roofs: Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

## 3.3.2.3 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

## 3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 20 feet in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given

to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

## 3.5 EQUIPMENT

## 3.5.1 Material Handling Equipment

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

## 3.5.2 Weight Handling Equipment

- a. Cranes must be equipped with:
  - (1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,
  - (2) or Load-Moment Indicating Devices (LMIs).
  - (3) Anti-two-block prevention devices.
  - (4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).
  - (5) Boom Length Indicator (for telescoping booms).
  - (6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.
  - (7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.
- b. The Contractor shall notify the Contracting Officer, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.
- c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.
- d. The Contractor shall comply with ASME B30.5 for mobile cranes, and ASME B30.22 for articulating boom cranes.
- e. The presence of Naval station safety and health inspectors does not

relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

- f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.
- g. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.
- h. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers.

  Personnel shall not be lifted with a live hoist or friction crane.
- i. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- j. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- k. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.
- 1. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H and ROICC for copies).
- m. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), COE EM-385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.
- n. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.
- o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- p. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.
- q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the

operator while seated in the control station.

- r. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by Contracting Officer personnel.
- s. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the Contracting Officer personnel.
- t. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

#### 3.6 Excavations

The competent person for excavation performed as a result of contract work shall be on-site when work is being performed in excavation, and shall inspect excavations prior to entry by workers. The competent person must evaluate for all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly. Prior to digging the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a utility locating service and coordinated with Station Utility Departments. The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 100 feet if parallel within 5 feet of the excavation. Trench and shoring systems must be identified in the accepted safety plan and activity hazard analysis. Extreme care must be used when excavating near direct burial electric underground cables. Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file in the project site office or trailer.

#### 3.7 ELECTRICAL

## 3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified.Perform all high voltage cutting remotely. When racking in or

live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

#### 3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

#### 3.8 WORK IN CONFINED SPACES

Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 5 feet in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.
- d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.
- e. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.
- f. Entry Permit. Use ENGFORM 5044-R or other form with the same minimum information for the Daily Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

## 3.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and COE EM-385-1-1, (Appendix C). The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

## 3.10 HOUSEKEEPING

## 3.10.1 Clean-up

All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

#### 3.10.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

#### 3.11 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

## 3.12 FIELD QUALITY CONTROL

## 3.12.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 01450, "Quality Control".

## 3.13 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

## 3.13.1 Safety Gas Containers

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

-- End of Section --

#### SECTION 01572

## WASTE MANAGEMENT 09/99

## PART 1 GENERAL

#### 1.1 DEFINITIONS

## 1.1.1 Construction and Demolition Waste

Solid wastes such as building materials, packaging and rubble resulting from construction, remodeling, demolition and repair of buildings/facilities, paving and infrastructure.

## 1.1.2 Recyclable Materials

Products and materials that can be recovered and remanufactured into a new product. Recyclable materials include, but are not limited to, the following:

- a. Metals (ferrous and non-ferrous), including banding, metal studs, ductwork, piping
- b. Asphaltic concrete paving
- c. Portland cement concrete
- d. Land clearing debris including trees and plant materials
- e. Native rock and granular fill
- f. Gypsum products
- g. Paper and cardboard
- h. Wood products, including structural, finish, crates and pallets
- i. Brick and masonry
- j. Carpet and padding
- k. Plastics
- 1. Copper wiring
- m. Mechanical and electrical products and equipment

## 1.1.3 Recycling Facility

A business that specializes in collecting, handling, processing, distributing, or remanufacturing waste materials generated by demolition and new construction projects, into products or materials that can be used

for this project or by others.

## 1.1.4 Salvage and Reuse

Existing usable product or material that can be saved and reused in some manner on the project site. Materials that can be salvaged and reused must comply with the applicable technical specifications and include, but are not limited to, the following:

- a. Dimensional lumber and other wood products
- b. Structural steel
- c. Soil
- d. Masonry products

#### 1.1.5 Salvage for Resale

Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

#### 1.1.6 Trash

Product or material unable to be salvaged for resale, salvaged and reused, returned, or recycled.

## 1.1.7 Waste Materials

Product or material that can be salvaged for resale, salvaged and reused, returned to vendors, or recycled.

## 1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Waste Management Plan; G

## 1.3 CONSTRUCTION WASTE MANAGEMENT

## 1.3.1 General Intent

The Contractor shall use all means available to divert to the greatest extent practical and economically feasible, construction and demolition waste from landfills and incinerators.

#### 1.3.2 Construction Waste Management Operations

Take a pro-active, responsible role in management of construction waste and require all subcontractors, vendors, and suppliers to participate in the

effort. Establish a construction waste management program that includes the following categories:

- a. Minimizing Packaging Waste
- b. Salvage and reuse
- c. Salvage for resale or donation
- d. Recycling
- e. Disposal

Salvage and reuse is a better waste management method than recycling because little or no reprocessing is necessary, thus less pollution is created when items are reused in their original form. Therefore, a diligent effort shall be made to salvage and reuse products and materials. Waste materials that cannot be salvaged and reused, and have value as being recyclable, shall be recycled. Only trash shall be transported to a landfill or incinerator. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling construction waste for this project. Revenues or other savings obtained for recycling or returns shall accrue to the Contractor.

## 1.3.3 Construction Waste Management Plan

Perform a waste analysis to determine the types and quantity of construction waste anticipated and identify salvage for resale, salvage and reuse, recycling and disposal options available. Within 30 days after contract award and prior to performing any demolition work, submit a Waste Management Plan for review and approval. The Waste Management Plan shall include the following:

- a. Project waste analysis.
- b. Projected cost of disposing of all trash and waste materials as if there would be no salvage or recycling on this project.
- c. Name, address and phone number for each landfill or incinerator facility to be utilized.
- d. Tipping fee for each landfill or incinerator.
- e. A list of waste materials that will be salvaged for resale, salvaged and reused, and recycled.
- f. Identification of each recycling facility to be utilized.
- g. Anticipated net cost savings determined by subtracting the cost of separating and recycling from the following:
  - 1. Savings due to reuse of demolished materials.

- 2. Revenue from the sale of salvaged and recycled materials.
- 3. Landfill or incinerator tipping fees saved due to diversion of materials to recycling.
- h. Description of the method to be employed in recycling waste materials and description of the method that will be used to protect recycled materials from contamination.
- i. Description of the means of transportation of recyclable materials and the destination of the materials.

#### PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

#### 3.1 PROGRAM IMPLEMENTATION AND MONITORING

Implement and maintain, for the duration of the project, the construction waste management program. Establish a method of monitoring and documenting the program, and submit a periodic report with each application for payment that includes the following:

- a. Amount (by weight) and type of waste materials disposed of in a landfill or incinerator, the tip fee per ton, and the total cost of disposal including transportation costs, container rental costs, etc.
- b. Amount (by weight) and type of materials salvaged for sale, salvaged for reuse, and recycled. Provide destination, means of transportation, cost of transportation and handling, tipping fee savings and revenue generated for each material.
- c. Cost savings due to salvaging, reusing, and recycling materials.

## 3.1.1 Hazardous Materials/Hazardous Wastes

If any non-acceptable materials such as hazardous materials or hazardous wastes are encountered, notify the Contracting Officer.

## 3.2 SALVAGE AND REUSE

Encourage the practice of efficient waste management when, sizing, cutting, and installing products and materials.

#### 3.3 SEPARATION OF RECYCLABLE WASTE MATERIALS

Provide the necessary containers and bins, to facilitate the waste management program, that are clearly and appropriately marked. Prevent contamination of recyclable materials from incompatible products and materials. Separate construction waste at the project site by one of the following methods:

- a. Source Separated Method: Waste products and materials, that are recyclable, are separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing. Trash is transported to a landfill or incinerator.
- b. Co-Mingled Method: All construction waste is placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed and the remaining trash is transported to a landfill or incinerator.
- c. Other methods proposed by the Contractor and approved by the Contracting Officer.
- -- End of Section --

## SECTION 01575

# TEMPORARY ENVIRONMENTAL CONTROLS 03/00

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.1200	Hazard Communication
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	EPA National Pollutant Discharge Elimination System Permit Regulations
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Generators of Hazardous Waste
40 CFR 263	Transporters of Hazardous Waste
40 CFR 264	Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 279	Used Oil Regulations
40 CFR 300	National Oil and Hazardous Substances

Pollution Contingency Plan

40 CFR 355 Emergency Planning and Notification

40 CFR 372-SUBPART D EPA Toxic Chemical Release Reporting

Regulations

49 CFR 173 Shipments and Packagings

49 CFR 178 Packagings

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 832-R-92-005 Storm Water Management for Construction

Activities

NORTH CAROLINA SEDIMENTATION CONTROL COMMISSION

NCSCC ESCM (1993) Erosion and Sediment Control

Planning and Design Manual

#### 1.2 DEFINITIONS

#### 1.2.1 Sediment

Soil and other debris that have eroded and have been transported by runoff water or wind.

## 1.2.2 Solid Waste

Garbage, refuse, debris, sludge, or other discharged material (except hazardous waste as defined in paragraph entitled "Hazardous Waste" or hazardous debris as defined in paragraph entitled "Hazardous Debris"), including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations. Material not regulated as solid waste are: nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

- a. Green waste: The vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.
- b. Surplus soil: Existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included.

- c. Inert construction and demolition debris: Broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments.
- d. Wood: Dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated and/or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included.
- e. Scrap metal: Scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.
- f. Paint cans: Metal cans that are empty of paints, solvents, thinners and adhesives. If permitted by the paint can label, a thin dry film may remain in the can.
- g. Recyclables: Materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable. Metal meeting the definition of lead contaminated or lead based paint contaminated may be included as recyclable if sold to a scrap metal company. Paint cans may be included as recyclable if sold to a scrap metal company.

## 1.2.3 Debris

Non-hazardous solid material generated during the construction, demolition, or renovation of a structure which exceeds 2.5 inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g. cobbles and boulders). A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

## 1.2.4 Hazardous Debris

As defined in paragraph entitled "Debris" of this section, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) per 40 CFR 261; or debris that exhibits a characteristic of hazardous waste per 40 CFR 261.

## 1.2.5 Chemical Wastes

This includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

## 1.2.6 Garbage

Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

## 1.2.7 Hazardous Waste

Hazardous waste as defined in 40 CFR 261 or as defined by applicable State and local regulations.

## 1.2.8 Oily Waste

Petroleum products and bituminous materials.

## 1.2.9 Regulated Waste

Those solid waste that have specific additional Federal, state, or local controls for handling, storage, or disposal.

## 1.2.10 Class I Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act and includes the following chemicals:

```
chlorofluorocarbon-11 (CFC-11)
                                            chlorofluorocarbon-213 (CFC-213)
chlorofluorocarbon-12 (CFC-12)
                                            chlorofluorocarbon-214 (CFC-214)
chlorofluorocarbon-13 (CFC-13)
                                           chlorofluorocarbon-215 (CFC-215)
chlorofluorocarbon-111 (CFC-111)
                                            chlorofluorocarbon-216 (CFC-216)
                                            chlorofluorocarbon-217 (CFC-217)
chlorofluorocarbon-112 (CFC-112)
                                            halon-1211
chlorofluorocarbon-113 (CFC-113)
chlorofluorocarbon-114 (CFC-114)
                                            halon-1301
chlorofluorocarbon-115 (CFC-115)
                                            halon-2402
chlorofluorocarbon-211 (CFC-211) naion-2402 chlorofluorocarbon-211 (CFC-211) carbon tetrachlorical chlorofluorocarbon-212 (CFC-212) methyl chloroform
                                            carbon tetrachloride
```

## 1.2.11 Hazardous Materials

Any material that is regulated as a hazardous material in accordance with 49 CFR 173, requires a Material Safety Data Sheet (MSDS) in accordance with 29 CFR 1910.1200, or which during end use, treatment, handling, storage, transportation or disposal meets or has components which meet or have the potential to meet the definition of a Hazardous Waste in accordance with 40 CFR 261. Throughout this specification, hazardous material includes hazardous chemicals.

#### 1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-01 Preconstruction Submittals

Environmental protection plan; G

Dirt and dust control plan; G

SD-06 Test Reports

Laboratory analysis

#### SD-11 Closeout Submittals

Some of the records listed below are also required as part of other submittals. For the "Records" submittal, maintain on-site a separate three-ring Environmental Records binder and submit at the completion of the project. Make separate parts to the binder corresponding to each of the applicable subitems listed below.

Preconstruction survey

Solid waste disposal permit

Waste determination documentation

Disposal documentation for hazardous and regulated waste

Contractor 40 CFR employee training records

Regulatory notification

Erosion and sediment control inspection reports

Solid waste disposal report

Contractor Hazardous Material Inventory Log; G

## 1.4 DIRT AND DUST CONTROL PLAN

Submit truck and material haul routes along with a plan for controlling dirt, debris, and dust on base roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

## 1.5 LABORATORY ANALYSIS

Submit a copy of a laboratory analysis of solid waste and debris with the potential of becoming classified as a hazardous waste (i.e., abrasive/sand blasting debris, etc.). Waste stream determinations are required at the point of generation and must sufficiently document whether the waste will be a solid waste, hazardous waste, or Resource Conservation and Recovery Act (RCRA) exempt waste. Determinations must use EPA approved methods and provide written rational for whether the waste is classified as hazardous or non-hazardous. The Contractor shall bear the cost of the waste stream determinations, and the Contracting Officer reserves the right to request waste stream determinations on questionable waste streams.

#### 1.6 REPORTS

## 1.6.1 Preconstruction Survey

Perform a preconstruction survey of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record.

## 1.6.2 Solid Waste Disposal Permit

Submit one copy of a State and local permit or license showing such agencies' approval of the disposal plan before transporting wastes off Government property.

#### 1.6.3 Waste Determination Documentation

The Contractor shall complete a Waste Determination form (provided at the pre-construction conference) for all contractor derived wastes to be generated. The waste determination must be based upon either a constituent listing from the manufacturer used in conjunction with consideration of the process by which the waste was generated, EPA approved analytical data, or laboratory analysis (Material Safety Data Sheets (MSDS) by themselves are not adequate). All support documentation must be attached to the Waste Determination form. As a minimum, a Waste Determination form must be provided for the following wastes (this listing is not all inclusive): oil and latex based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and all containers of the original materials.

## 1.6.4 Disposal Documentation for Hazardous and Regulated Waste

Submit a copy of the applicable EPA and State permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities.

## 1.6.5 Contractor 40 CFR Employee Training Records

Prepare and maintain employee training records throughout the term of the contract meeting applicable 40 CFR requirements. The Contractor shall ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with Federal, State and local regulatory requirements for RCRA Large Quantity Generator. The Contractor shall provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description shall include training requirements as defined in 40 CFR 265 for a Large Quantity Generator facility. Submit these training records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

## 1.6.6 Regulatory Notification

The Contractor is responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. The Contractor shall forward copies to the Contracting Officer prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all inclusive): demolition, renovation, NPDES defined site work, remediation of controlled substances (asbestos, hazardous waste, lead paint).

## 1.6.7 Erosion and Sediment Control Inspection Reports

Submit "Erosion and Sediment Control Inspection Reports" (form provided at the pre-construction conference) to the Contracting Officer once every 7 calendar days and within 24 hours of a storm event that produces 0.5 inch or more of rain.

#### 1.6.8 Solid Waste Disposal Report

Monthly the Contractor shall submit a solid waste disposal report to the Contracting Officer. For each waste, the report shall state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste. The Contractor shall include copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, the Contractor may submit a statement indicating the disposal location for the solid waste which is signed by an officer of the Contractor firm authorized to legally obligate or bind the firm. The sales documentation or Contractor certification shall include the receiver's tax identification number and business, EPA or State registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained by the Contractor for his own use, the Contractor shall submit on the solid waste disposal report the information previously described in this paragraph. Prices paid or received shall not be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

## 1.7 CLASS I ODS PROHIBITION

Class I ODS as defined and identified herein shall not be used in the performance of this contract, nor be provided as part of the equipment. This prohibition shall be considered to prevail over any other provision, specification, drawing, or referenced documents.

#### 1.8 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with Federal, State, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Environmental Brief: Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the activity; types and quantities of wastes/wastewater that may be generated during the contract.

#### 1.8.1 Facility Hazardous Waste Generator Status

MCAS Cherry Point is designated as a Large Quantity Generator . All work conducted within the boundaries of this activity must meet the regulatory requirements of this generator designation. The Contractor shall comply with all provisions of Federal, State and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of all construction derived wastes.

#### 1.8.2 Licenses and Permits

Obtain licenses and permits pursuant to the "Permits and Responsibilities" FAR Clause.

#### 1.8.3 Contractor Liabilities for Environmental Protection

The Contractor is advised that this project and the station are subject to Federal, State, and local regulatory agency inspections to review compliance with environmental laws and regulations. The Contractor shall fully cooperate with any representative from any Federal, State or local regulatory agency who may visit the job site and shall provide immediate notification to the Contracting Officer, who shall accompany them on any subsequent site inspections. The Contractor shall complete, maintain, and make available to the Contracting Officer, station, or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State and local laws and regulations. The Contractor shall immediately notify the Contracting Officer if a Notice of Violation (NOV) is issued to the Contractor.

The Contractor shall be responsible for all damages to persons or property resulting from Contractor fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State or local regulatory agency as a result of the Contractor's or any subcontractor's violation of any applicable Federal, State or local environmental law or regulation. Should a Notice of Violation (NOV), Notice of Noncompliance (NON), Notice of Deficiency (NOD), or similar regulatory agency notice be issued to the Government as facility owner/operator on account of the actions or inactions of the Contractor or one of its subcontractors in the performance of work under this contract, the Contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

#### 1.9 ENVIRONMENTAL MANAGER

The Contractor shall appoint in writing an Environmental Manager for the project site. The Environmental Manager shall be directly responsible for coordinating contractor compliance with Federal, State, local, and station requirements. The Environmental Manager shall ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the Environmental Protection Plan; ensure that all environmental permits are obtained, maintained, and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a

collateral position; however the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out.

#### 1.10 ENVIRONMENTAL PROTECTION PLAN

Five days after the award of contract, the Contractor shall meet with the Contracting Officer to discuss the proposed Environmental Protection Plan and develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, and other measures to be taken. The Environmental Protection Plan shall be submitted in the following format and shall, at a minimum, address the following elements (also refer to paragraph entitled "Protection of Natural Resources" in this section):

- a. Description of the Environmental Protection Plan
  - (1) General overview and purpose
  - (2) General site information
  - (3) A letter signed by an officer of the firm appointing the Environmental Manager and stating that he/she is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.
- b. Protection of Natural Resources
  - (1) Land resources
  - (2) Tree protection
  - (3) Replacement of damaged landscape features
  - (4) Temporary construction
  - (5) Stream crossings
  - (6) Fish and wildlife resources
  - (7) Wetland areas
- c. Protection of Historical and Archaeological Resources
  - (1) Objectives

- (2) Methods
- d. Storm Water Management and Control
  - (1) Ground cover
  - (2) Erodible soils
  - (3) Temporary measures
  - (a) Mechanical retardation and control of runoff
  - (b) Vegetation and mulch
  - (4) Storm Water Pollution Prevention Measures and Notice of Intent 40 CFR 122.26, EPA 832-R-92-005. Provide a "Storm Water Pollution Prevention Plan" (SWPPP) for the project. The SWPPP shall meet the requirements of the EPA and State of North Carolina general permit for storm water discharges from construction sites. Submit the SWPPP along with any required Notice of Intents, Notice of Termination, and appropriate permit fees, via the Contracting Officer, to the appropriate State agency for approval, a minimum of 14 calendar days prior to the start of construction. A copy of the approved SWPPP shall be kept at the construction on-site office, and continually updated as regulations require to reflect current site conditions.
  - (a) Identify potential sources of pollution which may be reasonably expected to affect the quality of storm water discharge from the site.
  - (b) Describe and ensure implementation of practices which will be used to reduce the pollutants in storm water discharge associated with industrial activity at the construction site.
  - (c) Ensure compliance with terms of state general permit for storm water discharge.
  - (d) Select applicable management practices from EPA 832-R-92-005.
  - (e) Provide completed copy of "Notice of Intent" and "Notice of Termination" except for effective date.
- e. Prevention of Releases to the Environment
  - (1) Procedures to prevent releases to the environment
  - (2) Notifications in the event of a release to the environment
- f. Protection of the Environment from Waste Derived from Contractor Operations
  - (1) Control and disposal of solid and sanitary waste

(2) Control and disposal of hazardous waste (Hazardous Waste Management Section)

This item shall consist of the management procedures for all hazardous waste to be generated. The elements of those procedures shall coincide with the Activity Hazardous Waste Management Plan. A copy of the Activity Hazardous Waste Management Plan will be provided by the Contracting Officer. As a minimum, include the following:

- (a) Procedures to be employed to ensure a written waste determination is made for appropriate wastes which are to be generated;
- (b) Sampling/analysis plan;
- (c) Methods of hazardous waste accumulation/storage (i.e., in tanks and/or containers);
- (d) Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted);
- (e) Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268);
- (f) Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and the like;
- (g) Used oil management procedures in accordance with 40 CFR 279;
- (h) Pollution prevention\hazardous waste minimization procedures;
- (i) Plans for the disposal of hazardous waste by permitted facilities;
- (j) Procedures to be employed to ensure all required employee training records are maintained.

#### 1.10.1 Environmental Protection Plan Review

Fourteen days after the environmental protection meeting, submit the proposed Environmental Protection Plan for further discussion, review, and approval. Commencement of work shall not begin until the environmental protection plan has been approved.

#### 1.11 UNFORESEEN HAZARDOUS OR REGULATED MATERIAL

All known hazardous or regulated materials are indicated in the contract documents. If material that is not indicated in the contract documents is encountered that may be dangerous to human health upon disturbance during construction operations, stop that portion of work and notify the Contracting Officer immediately. Intent is to identify materials such as

PCB, lead paint, mercury, petroleum products, and friable and nonfriable asbestos. Within 14 calendar days the Government will determine if the material is hazardous. If the material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If the material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

## 1.12 CONTRACTOR HAZARDOUS MATERIAL INVENTORY LOG

Submit the "Contractor Hazardous Material Inventory Log" (copy at end of section), which provides information required by (EPCRA Sections 312 and 313) along with corresponding Material Safety Data Sheets (MSDS) to the Contracting Officer at the start and at the end of construction (30 days from final acceptance), and update no later than January 31 of each calendar year during the life of the contract. Documentation for any spills/releases, environmental reports or off-site transfers may be requested by the Contracting Officer.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

#### 3.1 PROTECTION OF NATURAL RESOURCES

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified. Conform to the national permitting requirements of the Clean Water Act and State of North Carolina Neuse River buffers.

## 3.1.1 Land Resources

Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Contracting Officer's permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage.

## 3.1.1.1 Protection of Trees

Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. By approved excavation, remove trees with 30 percent or more of their root systems destroyed.

# 3.1.1.2 Replacement

Remove trees and other landscape features scarred or damaged by equipment

operations, and replace with equivalent, undamaged trees and landscape features. Obtain Contracting Officer's approval before replacement.

#### 3.1.2 Water Resources

## 3.1.2.1 Oily and Hazardous Substances

Prevent oil or hazardous substances from entering the ground, drainage areas, or navigable waters. In accordance with 40 CFR 112, surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm shall be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

#### 3.2 EROSION AND SEDIMENT CONTROL MEASURES

#### 3.2.1 Burnoff

Burnoff of the ground cover is not permitted.

#### 3.2.2 Protection of Erodible Soils

Immediately finish the earthwork brought to a final grade, as indicated or specified. Immediately protect the side slopes and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils.

# 3.2.3 Temporary Protection of Erodible Soils

All erosion control measures shall follow NCSCC ESCM. Use the following methods to prevent erosion and control sedimentation:

#### 3.2.3.1 Mechanical Retardation and Control of Runoff

Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, berms, and use of silt fences to retard and divert runoff to protected drainage courses.

#### 3.2.3.2 Sediment Basins

Trap sediment in temporary sediment basins. Select a basin size to accommodate the runoff of a local 10-year storm. Pump dry and remove the accumulated sediment, after each storm. Use a paved weir or vertical overflow pipe for overflow. Remove collected sediment from the site. Institute effluent quality monitoring programs.

## 3.2.3.3 Vegetation and Mulch

Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of permanent vegetation,

temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

a. Seeding: Provide new seeding where ground is disturbed. Include topsoil or nutriment during the seeding operation necessary to reestablish a suitable stand of grass.

#### 3.3 CONTROL AND DISPOSAL OF SOLID WASTES

Pick up solid wastes, and place in covered containers which are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Recycling is encouraged and can be coordinated with the Contracting Officer and the activity recycling coordinator. Remove all solid waste (including non-hazardous debris) from Government property and dispose off-site at an approved landfill. Solid waste disposal off-site must comply with most stringent local, State, and Federal requirements including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

## 3.3.1 Dumpsters

Equip dumpsters with a secure cover and paint the standard base color. Keep cover closed at all times, except when being loaded with trash and debris. Locate dumpsters behind the construction fence or out of the public view. Empty site dumpsters at least once a week. or as needed to keep the site free of debris and trash. If necessary, provide 55 gallon trash containers painted the darker base color to collect debris in the construction site area. Locate the trash containers behind the construction fence or out of the public view. Empty trash containers at least once a day. For large demolitions, large dumpsters without lids are acceptable but should not have debris higher than the sides before emptying.

## 3.4 CONTROL AND DISPOSAL OF HAZARDOUS WASTES

## 3.4.1 Hazardous Waste/Debris Management

The Contractor shall identify all construction activities which will generate hazardous waste/debris. The Contractor must provide a documented waste determination for all resultant waste streams. Hazardous waste/debris shall be identified, labeled, handled, stored, and disposed of in accordance with all Federal, State, and local regulations including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and 40 CFR 268. Hazardous waste shall also be managed in accordance with the approved Hazardous Waste Management Section of the Environmental Protection Plan. Store hazardous wastes in approved containers in accordance with 49 CFR 173 and 49 CFR 178. Hazardous waste generated within the confines of Government facilities shall be identified as being generated by the Government. Prior to removal of any hazardous waste from Government property, all hazardous waste manifests must be signed by activity personnel from the Station Environmental Office. No hazardous waste shall be brought onto Government property. Provide to the Contracting Officer a

copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D. For hazardous wastes spills, verbally notify the Contracting Officer immediately.

# 3.4.1.1 Regulated Waste Storage/Satellite Accumulation/90 Day Storage Areas

If the work requires the temporary storage/collection of regulated or hazardous wastes, the Contractor shall request the establishment of a Regulated Waste Storage Area, a Satellite Accumulation Area, or a 90 Day Storage Area at the point of generation. The Contractor must submit a request in writing to the Contracting Officer providing the following information:

Contract Number	Contractor	
Haz/Waste or Regulated Waste POC	Phone Number	
Type of Waste	Source of Waste	
Emergency POC	Phone Number	
Location of the Site:(Attach Site Plan to the Request)		

Attach a waste determination form. Allow ten working days for processing this request.

# 3.4.2 Pollution Prevention/Hazardous Waste Minimization

The Contractor shall actively pursue minimizing the use of hazardous materials and the generation of hazardous waste while on-base. The Hazardous Waste Management Section of the Environmental Protection Plan shall include the Contractor's procedures for pollution prevention/hazardous waste minimization. For preparing this part of the plan, the Contractor may consult the activity Environmental Office for suggestions and to obtain a copy of the installation's pollution prevention/hazardous waste minimization plan for reference material. If no written plan exists, the Contractor may obtain information by contacting the Contracting Officer. The Contractor shall describe the types of the hazardous materials expected to be used in the construction when requesting information.

# 3.4.3 Hazardous Material Control

The Contractor shall include hazardous material control procedures in the Safety Plan. The procedures shall address and ensure the proper handling of hazardous materials, including the appropriate transportation requirements. The Contractor shall submit a MSDS and estimated quantities to be used for each hazardous material to the Contracting Officer prior to bringing the material on base. Typical materials requiring MSDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum

products. At the end of the project, the Contractor shall provide the Contracting Officer with the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used. The Contractor shall also ensure that hazardous materials are utilized in a manner that will minimize the amount of hazardous waste that is generated. The Contractor shall ensure that all containers of hazardous materials have NFPA labels or their equivalent. Copies of the MSDS for hazardous materials shall be kept on site at all times and provided to the Contracting Officer at the end of the project. The Contractor shall certify that all hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste per 40 CFR 261.

#### 3.4.4 Petroleum Products

Conduct the fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. All used oil generated on site shall be managed in accordance with 40 CFR 279. The Contractor shall determine if any used oil generated while on-site exhibits a characteristic of hazardous waste. In addition, used oil containing 1000 parts per million of solvents will be considered a hazardous waste and disposed of at Contractor's expense. Used oil mixed with a hazardous waste will also be considered a hazardous waste. All hazardous waste will be managed in accordance with the paragraph entitled Hazardous Waste/Debris Management of this section and shall be managed in accordance with the approved Environmental Protection Plan.

## 3.4.5 Releases/Spills of Oil and Hazardous Substances

Take precautions to prevent releases/spills of oil and hazardous substances. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Base or Activity Fire Department, the activity's Command Duty Officer, and the Contracting Officer. The Contractor is responsible for verbal and written notifications as required by the federal 40 CFR 355, State, local regulations and Navy Instructions. Spill response shall be in accordance with 40 CFR 300 and applicable State and local regulations. Contain and clean up these spills without cost to the Government. If Government assistance is requested or required, the Contractor shall reimburse the Government for such assistance. Provide copies of the written notification and documentation that a verbal notification was made within 20 days.

### 3.5 DUST CONTROL

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster.

# 3.6 NOISE

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives will not be permitted without written permission from the Contracting Officer, and then only during the designated times. Confine pile-driving operations to the period between 8 a.m. and 4 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

-- End of Section --

#### SECTION 01580

# PROJECT IDENTIFICATION 03/98

#### PART 1 GENERAL

#### 1.1 REFERENCES

The publication listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

AWPA C1 (1996) All Timber Products - Preservative

Treatment by Pressure Processes

AWPA C2 (1996) Lumber, Timber, Bridge Ties and

Mine Ties - Preservative Treatment by

Pressure Processes

#### 1.2 SUBMITTALS

Submitting the following in accordance with Section 01330, "Submittal Procedures."

#### SD-04 Drawings

- a. Preliminary one line drawings of project rendering; G
- b. Final rendering; sample G
- c. Final framed rendering; and copies G

## 1.3 QUALITY ASSURANCE

# 1.3.1 Rendering

Provide the project rendering in accordance with the following drawing stages as required in paragraph entitled "Submittals". The following submittal data is required to properly identify the appropriate view and approve the final rendering of the facility. The final painted rendering will be used to produce the image for the signboard and framed photographic copies provided to the Contracting Officer.

# 1.3.1.1 Preliminary One Line Drawings

Provide three different views of the facility in a preliminary single line drawing (black and white) format. These three views will represent the best angles at which to view the proposed facility showing the best design features and the three dimensional character of the facility.

## 1.3.1.2 Final Rendering Sample

Provide a photographic copy (8  $\times$  10 inches minimum size) of final rendering for approval of color, landscaping, and foreground/background development prior to final submittal.

#### 1.3.1.3 Final Framed Rendering and Copies

Provide final full color rendering of the proposed facility as specified.

#### 1.4 PROJECT SIGN

Within 15 days after the commencement of work, provide one project identification sign at the location designated by the Contracting Officer. Construct the sign in accordance with project sign detail attached at the end of this section. Maintain sign throughout the life of the project. Upon completion of the project, remove the sign from the site. Provide color rendering of the project. Reproduce the rendering on the signboard or enclose a copy of the rendering under a water-proof, transparent cover, and caulk for weather protection.

## 1.4.1 Project Identification Signboard (Navy)

A project identification signboard shall be provided in accordance with attached Plates 2, 4 and 5. The signboard shall be provided at a conspicuous location on the job site where directed by the Contracting Officer.

- a. The field of the sign shall consist of a 4 by 8 foot sheet of grade B-B medium density overlaid exterior plywood.
- b. Lumber shall be B or Better Southern pine, pressure-preservative treated in accordance with AWPA C1 and AWPA C2. Nails shall be aluminum or galvanized steel.
- c. The entire signboard and supports shall be given one coat of exterior alkyd primer and two coats of exterior alkyd enamel paint. The lettering and sign work shall be performed by a skilled sign painter using paint known in the trade as bulletin colors. The colors, lettering sizes, and lettering styles shall be as indicated. Where preservative-treated lumber is required, utilize only cured pressure-treated wood which has had the chemicals leached from the surface of the wood prior to painting.
- d. The high gloss acrylic gold enamel paint used as background for the Department of the Navy - Atlantic Division, Naval Facilities Engineering Commandapplied sticker shall be spray applied automotive quality paint. The 18 inch diameter applied sticker shall be a silkscreened image in the design indicated, painted on a 2 millimeter transparent polyester film. The weather resistant, self adhering film shall be rated for a minimum of 2 year exterior vertical exposure and be mounted to sign with pressure sensitive, permanent acrylic adhesive. Shop cut sticker to round shape and provide pull-off backing sheet on adhesive side of design sticker

for shipping. Provide applied design sticker in accordance with attached detail.

- e. Sign paint colors (numbers listed below for color identification only)
  - (1) Blue = Benjamin Moore Paints No. 826.
  - (2) White = Benjamin Moore Paints No. 873.
  - (3) Gold = Dupont No. B8014, Metallic gold.
- f. Final signboard artwork (rendering) may be either mounted under plexiglass as indicated in attached Plates 2 and 5, or at the Contractor's option may be electrostatically printed on 4 mil self-adhering, weather resistant, glossy vinyl film and mounted to signboard. Provide film that is capable of full color reproduction of the building rendering and cover it with a ultra-violet protection film. Laminate the 2 mil satin gloss clear protection film to the white 4 mil vinyl image film. Utilize pressure sensitive "controltac" adhesive to attach rendering to signboard and smooth out surface with hand pressure tools in accordance with manufacturer's recommendations. Shop cut sticker to size required and provide pull-off backing sheet on adhesive side of film for shipping. Provide the rendering on film that is rated for a minimum of 2 years exterior vertical exposure.

## 1.4.1.1 Project Rendering

Provide a full color rendering of the proposed facility as specified below:

- a. Provide rendering by a company that regularly does this work as a major component of their normal business.
- b. Colors used on rendering shall match the exterior color scheme indicated in the contract document.
- c. The rendering shall be a full vignette/fully developed, on heavy illustration board. Approximate finished size shall be 24 x 30 inches with minimum inside mat dimension of 16 X 20 inches. Draw the rendering at human eye level view, painted with Case-in Tempera.
- d. Provide three preliminary single line black and white perspectives prior to proceeding with the color rendering. Provide these preliminary perspectives within 30 days after preliminary design approval for evaluation by the Contracting Officer. The view selected by the Contracting Officer shall be developed into the final rendering.
- e. Provide the final rendering sample photograph within 30 days after approval of preliminary single line drawings. Provide this sample photograph for evaluation by the Contracting Officer.

- f. Provide final rendering and two (2) full size photographic reproductions of the original rendering. Original and reproductions shall be matted with appropriate colored board and framed in contemporary metal frames, using non-glare glass. Project name, location, Architect/Engineer firm's name shall be printed on the matting.
- g. The rendering, the photographic copies, and the negative shall be shipped in resilient packaging to ensure damage-free delivery.

Deliver to: Housing Department ATTN: Director

PSC Box 8034, MCAS Cherry Point, NC 28533-0034

h. Provide copy of rendering to be used for the signboard that has been protected from UV damage as per specifications.

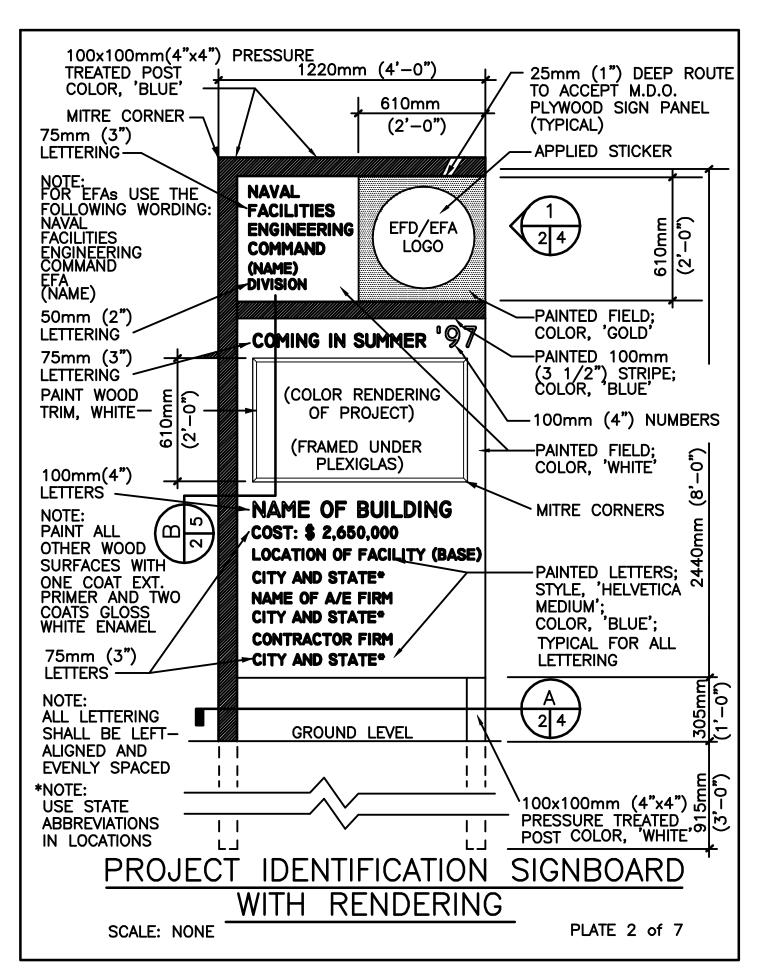
PART 2 PRODUCTS

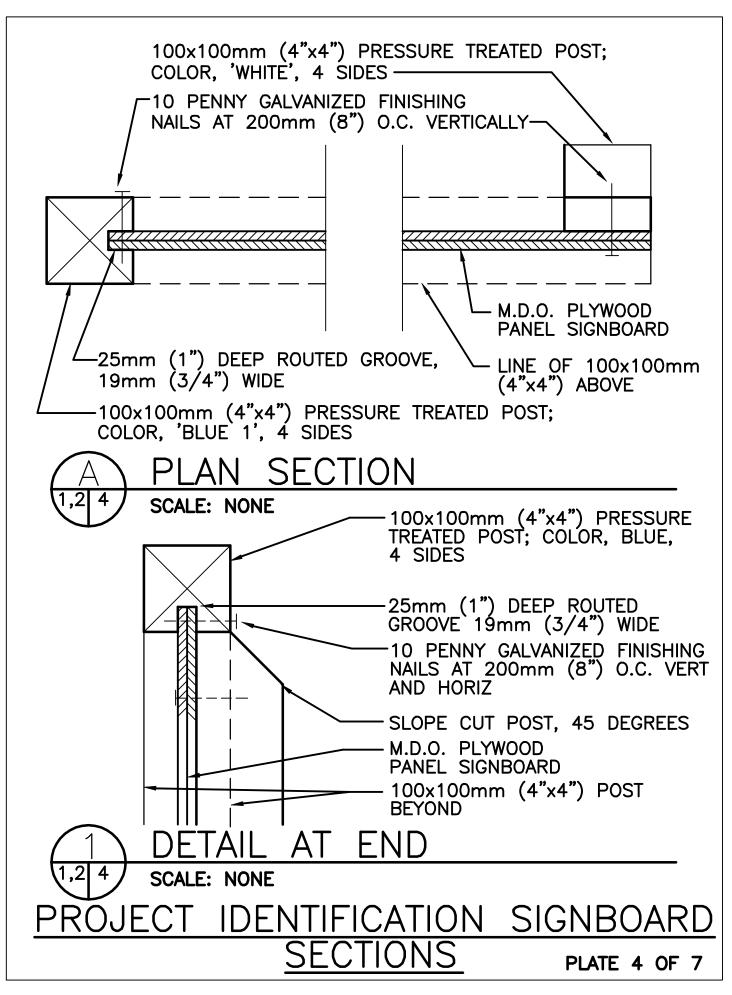
Not used.

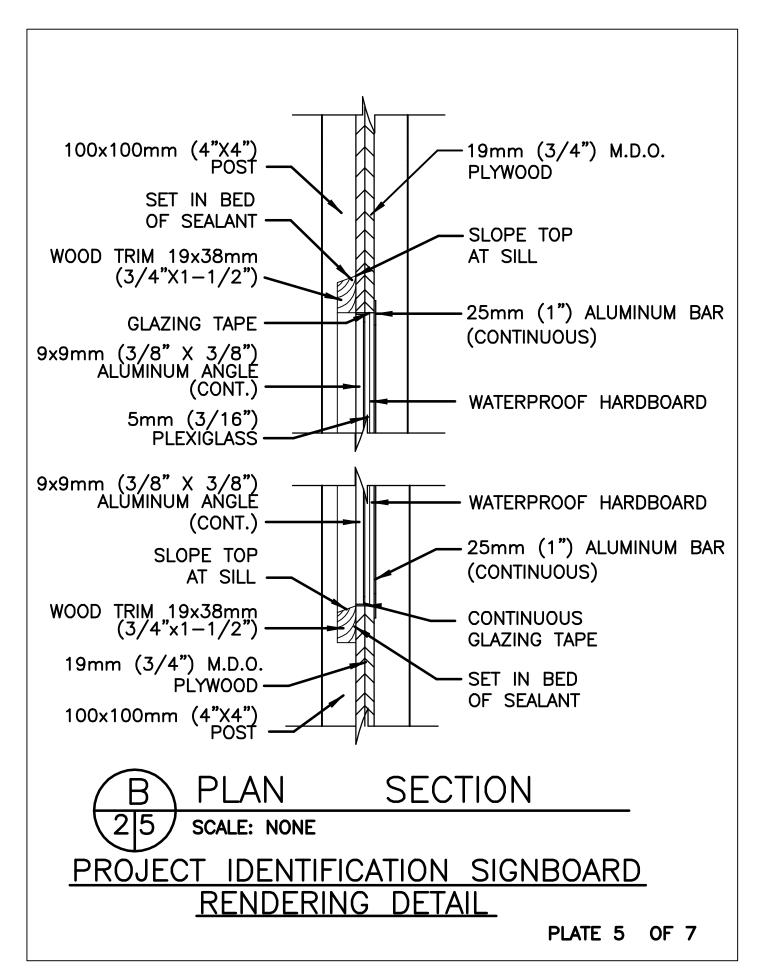
PART 3 EXECUTION

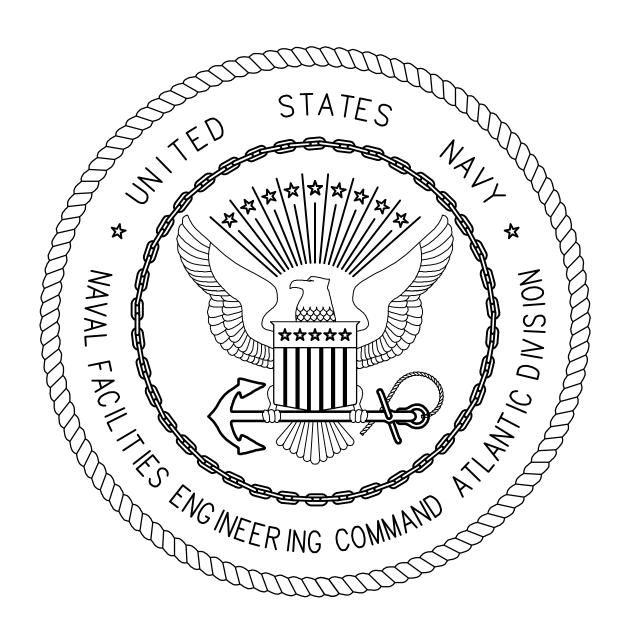
Not used.

-- End of Section --









APPLIED STICKER DETAIL

PROJECT IDENTIFICATION SIGNBOARD

NOT TO SCALE

#### SECTION 01770

# CLOSEOUT PROCEDURES 09/00

## PART 1 GENERAL

## 1.1 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-10 Operation and Maintenance Data

Equipment/product warranty list

Submit Data Package 1 in accordance with Section 01781, "Operation and Maintenance Data."

SD-11 Closeout Submittals

As-built drawings; G

Record of materials; G

Equipment/product warranty tag; G

Certification of EPA Designated Items; G

1.2 Certification of EPA Designated Items

Submit the Certification of EPA Designated Items as required by FAR 52.223-9, "Certification and Estimate of Percentage of Recovered Material Content for EPA Designated Items".

- 1.3 PROJECT RECORD DOCUMENTS
- 1.3.1 As-Built Drawings

"FAC 5252.236-9310, Record Drawings."

1.3.2 As-Built Record of Materials

Furnish a record of materials.

Where several manufacturers' brands, types, or classes of the item listed have been used in the project, designate specific areas where each item was used. Designations shall be keyed to the areas and spaces depicted on the contract drawing. Furnish the record of materials used in the following format:

MATERIALS DESIGNATION	SPECIFICATION	MANUFACTURER	MATERIALS USED (MANUFACTURER'S DESIGNATION)	WHERE USED

#### 1.4 EQUIPMENT/PRODUCT WARRANTIES

## 1.4.1 Equipment/Product Warranty List

Furnish to the Contracting Officer a bound and indexed notebook containing written warranties for equipment/products furnished under the contract, and prepare a complete listing of such equipment/products. The equipment/products list shall state the specification section applicable to the equipment/product, duration of the warranty therefor, start date of the warranty, ending date of the warranty, and the point of contact for fulfillment of the warranty. The warranty period shall begin on the same date as project acceptance and shall continue for the full product warranty period. Execute the full list and deliver to the Contracting Officer prior to final acceptance of the facility.

## 1.4.2 Equipment Warranty Tags and Guarantor's Local Representative

Furnish with each warranty the name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and appliances are installed. The guarantor's representative, upon request of the station representative, shall honor the warranty during the warranty period, and shall provide the services prescribed by the terms of the warranty. At the time of installation, tag each item of warranted equipment with a durable, oil- and water-resistant tag approved by the Contracting Officer. Attach tag with copper wire and spray with a clear silicone waterproof coating. Leave the date of acceptance and QC's signature blank until project is accepted for beneficial occupancy. Tag shall show the following information:

## EQUIPMENT/PRODUCT WARRANTY TAG

Type of Equipment/Product			
Warranty Period	From	To	
Contract No			
Inspector's Signature		Date Accepted	
Construction Contractor:			
Name:			
Address:			
Telephone:			
Warranty Contact:		_	
Name:			
Address:			
Telephone:			

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

#### 1.5 MECHANICAL TESTING AND BALANCING

All contract requirements of Section 15700, "Heating, Ventilating, and Cooling System" shall be fully completed, including all testing, prior to contract completion date.

#### 1.6 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

#### SECTION 01781

# OPERATION AND MAINTENANCE DATA 03/98

#### PART 1 GENERAL

#### 1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data/Manuals which are specifically applicable to this contract and a complete and concise depiction of the provided equipment or product. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

#### 1.1.1 Quantity

Submit three sets of the supplier/manufacturers' O&M information specified herein for the components, assemblies, subassemblies, attachments, and accessories. The items for which O&M Data/Manuals are required are listed in the technical sections which specifies those particular items.

## 1.1.2 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

## 1.1.3 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." For each product, system, or component piece of equipment requiring submission of O&M Data, submit the Data Package specified in the individual technical section.

# 1.1.4 Delivery

Submit O&M Data Manuals to the Contracting Officer for review and acceptance; submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

a. In the event the Contractor fails to deliver O&M Data/Manuals within the time limits set forth above, the Contracting Officer may withhold from progress payments 50 percent of the price of the item with which such O&M Data/Manuals are associated.

## 1.1.5 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data,

shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

## 1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

## 1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

#### 1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

## 1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

#### 1.2.1.3 Startup, Shutdown, and Postshutdown Procedures

Provide narrative description for each operating procedure including control sequence for each.

## 1.2.1.4 Normal Operations

Provide narrative description of normal operating procedures. Include control diagrams with data to explain operation and control of systems and specific equipment.

## 1.2.1.5 Emergency Operations

Include emergency procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include emergency shutdown instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance on emergency operations of all utility systems including valve locations and portions of systems controlled.

### 1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and gage reading recording.

# 1.2.1.7 Environmental Conditions

Include a list of environmental conditions (temperature, humidity, and other relevant data) which are best suited for each product or piece of equipment and describe conditions under which equipment should not be allowed to run.

#### 1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance

to minimize corrective maintenance and repair.

#### 1.2.2.1 Lubrication Data

Include lubrication data, other than instructions for lubrication in accordance with paragraph titled "Operator Service Requirements":

- a. A table showing recommended lubricants for specific temperature ranges and applications;
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities; and
- c. A lubrication schedule showing service interval frequency.

#### 1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance and repair. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

## 1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommendations on procedures and instructions for correcting problems and making repairs.

# 1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

# 1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation numbering.

## 1.2.3.3 Maintenance and Repair Procedures

Include instructions and list tools required to restore product or equipment to proper condition or operating standards.

## 1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

# 1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead time to obtain.

#### 1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including craft requirements by type of craft. Corrective maintenance that requires participation of the equipment manufacturer shall be identified and tabulated separately.

## 1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

# 1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number which will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies. Parts data may cover more than one model or series of equipment. components, assemblies, subassemblies, attachments, or accessories, such as a master parts catalog, in accordance with the manufacturer's standard commercial practice.

# 1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

## 1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers to use in training designated personnel to operate and maintain the equipment and systems properly.

## 1.2.6.3 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

#### 1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each subcontractor installing the product or equipment. Include local representatives and service organizations most convenient to the project site. Provide the name, address, and telephone number of the product or equipment manufacturers.

#### 1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M Data Packages specified in individual technical sections. The required information for each O&M Data Package is as follows:

## 1.3.1 Data Package 1

- a. Safety precautions
- b. Maintenance and repair procedures
- c. Warranty information
- d. Contractor information
- e. Parts list (for assembled items)
- f. Manual information for appliances, such as stoves, refrigerators, dishwashers, fire suppression system, and water heaters.

### 1.3.2 Data Package 2

- a. Safety precautions
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan and schedule
- f. Maintenance and repair procedures
- g. Removal and replacement instructions

- h. Spare parts and supply list
- i. Parts identification
- j. Warranty information
- k. Contractor information
- 1. Manual information for appliances, such as stoves, refrigerators, dishwashers, fire suppression system, and water heaters.
- m. Copies of test results for the following: HVAC system, fire suppression system, sprinkler system, water supply, and electrical.

# 1.3.3 Data Package 3

- a. Safety precautions
- b. Normal operations
- c. Emergency operations
- d. Environmental conditions
- e. Lubrication data
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring diagrams and control diagrams
- i. Maintenance and repair procedures
- j. Removal and replacement instructions
- k. Spare parts and supply list
- 1. Parts identification
- m. Warranty information
- n. Testing equipment and special tool information
- o. Contractor information
- p. Manual information for appliances, such as stoves, refrigerators, dishwashers, fire suppression system, and water heaters.
- q. Copies of test results for the following: HVAC system, fire suppression system, sprinkler system, water supply, and electrical.

## 1.3.4 Data Package 4

- a. Safety precautions
- b. Operator prestart
- c. Startup, shutdown, and postshutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Operator service requirements
- q. Environmental conditions
- h. Lubrication data
- i. Preventive maintenance plan and schedule
- j. Troubleshooting guides and diagnostic techniques
- k. Wiring diagrams and control diagrams
- 1. Maintenance and repair procedures
- m. Removal and replacement instructions
- n. Spare parts and supply list
- o. Corrective maintenance man-hours
- p. Parts identification
- q. Warranty information
- r. Personnel training requirements
- s. Testing equipment and special tool information
- t. Contractor information
- u. Manual information for appliances, such as stoves, refrigerators, dishwashers, fire suppression system, and water heaters.
- v. Copies of test results for the following: HVAC system, fire suppression system, sprinkler system, water supply, and electrical.

# 1.3.5 Data Package 5

- a. Safety precautions
- b. Operator prestart
- c. Start-up, shutdown, and post shutdown procedures

- d. Normal operations
- e. Environmental conditions
- f. Preventive maintenance plan and schedule
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring and control diagrams
- i. Maintenance and repair procedures
- j. Spare parts and supply list
- k. Testing equipments and special tools
- 1. Warranty information
- m. Contractor information
- n. Manual information for appliances, such as stoves, refrigerators, dishwashers, fire suppression system, and water heaters.
- o. Copies of test results for the following: HVAC system, fire suppression system, sprinkler system, water supply, and electrical.

# PART 2 PRODUCTS

Not used.

# PART 3 EXECUTION

Not used.

-- End of Section --